

**US Army Corps
of Engineers®**

**FOURTH FIVE-YEAR REVIEW REPORT FOR THE
ALABAMA ARMY AMMUNITION PLANT – AREA B
SUPERFUND SITE
TALLADEGA COUNTY, ALABAMA**

FINAL

Prepared for:
U.S. Army Corps of Engineers
Mobile District
Mobile, Alabama 36602

And

Office of Assistant Chief of Staff for Installation Management
ATTN: BRAC Division (DAIM-ODB)
600 Army Pentagon
Washington, DC 20310-0600

Prepared by:
Leidos
11951 Freedom Drive
Reston, Virginia 20190

Contract No. W912DR-13-D-0017
Delivery Order No. CK01
Leidos Project No. 310174.00.01.10.101.10113

September 2018

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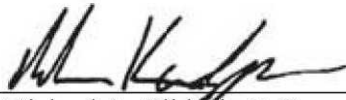
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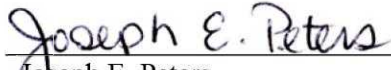
CERTIFICATION 4
CONTRACTOR STATEMENT OF INDEPENDENT TECHNICAL REVIEW

Leidos has completed this Fourth Five-Year Review Report for the Alabama Army Ammunition Plant Superfund Site, Talladega County, Alabama. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project as defined in the Leidos Quality Assurance Plan. During the independent technical review, compliance with established policy principles and procedures, using justified and valid assumptions, was verified. This included review of assumptions, methods, procedures, and materials used in analyses; the appropriateness of data used and the level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with the law and existing Corps of Engineers policy.



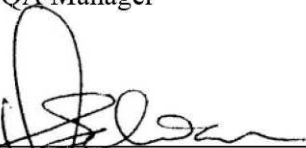
Michael A. Klidzejs, P.G.
Five-Year Review Task Manager

September 19, 2018
Date



Joseph E. Peters
QA Manager

September 19, 2018
Date

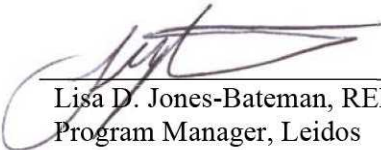


Selvam Arunachalam, P.E.
Independent Technical Review

September 19, 2018
Date

Significant concerns and explanation of the resolutions are documented within the project file.

As noted above, all concerns resulting from independent technical review of the project have been considered.



Lisa D. Jones-Bateman, REM, PMP
Program Manager, Leidos

September 19, 2018
Date

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LIST OF ACRONYMS AND ABBREVIATIONS

ACM	Asbestos-Containing Material
ADEM	Alabama Department of Environmental Management
ALAAP	Alabama Army Ammunition Plant
ARAR	Applicable or Relevant and Appropriate Requirement
AUECA	Alabama Uniform Environmental Covenants Act
BERA	Baseline Ecological Risk Assessment
BLS	Below Land Surface
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
CFR	Code of Federal Regulations
COC	Chemical of Concern
COPEC	Chemical of Potential Ecological Concern
cPAH	Carcinogenic Polynuclear Aromatic Hydrocarbon
CSF	Cancer Slope Factor
DNB	Dinitrobenzene
DNT	Dinitrotoluene
EBS	Environmental Baseline Survey
ECC	Environmental Chemical Corporation
ecoCOC	Ecological Chemical of Concern
ecoSSL	Ecological Soil Screening Level
EPA	U.S. Environmental Protection Agency
EPC	Exposure Point Concentration
ERA	Ecological Risk Assessment
ESD	Explanation of Significant Differences
ESE	Environmental Science and Engineering
FOSET	Finding of Suitability for Early Transfer
FS	Feasibility Study
FYR	Five-Year Review
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
IROD	Interim Record of Decision
ISS	Industrial Sewer System
IUR	Inhalation Unit Risk
LOAEL	Lowest-Observable-Adverse-Effect Level
LRA	Local Redevelopment Authority
LUC	Land Use Control
LUCIP	Land Use Control Implementation Plan
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFA	No Further Action
NHWL	Non-Hazardous Waste Landfill
NOAEL	No-Observable-Adverse-Effect Level
OU	Operable Unit
P.E.	Professional Engineer
P.G.	Professional Geologist
PAH	Polynuclear Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

PMP	Project Management Professional
PRG	Preliminary Remediation Goal
PVC	Polyvinyl Chloride
QA	Quality Assurance
QC	Quality Control
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
REM	Registered Environmental Manager
RfC	Reference Concentration
RfD	Reference Dose
RGO	Remedial Goal Option
RI	Remedial Investigation
ROD	Record of Decision
RSL	Regional Screening Level
SAIC	Science Applications International Corporation
SERA	Screening-Level Ecological Risk Assessment
SES	SpecPro Environmental Services
SSHP	Site Safety and Health Plan
SVOC	Semivolatile Organic Compound
TCLP	Toxicity Characteristic Leaching Procedure
TETC	The Earth Technology Corporation
tetryl	Trinitrophenylmethylnitramine
TIS	Transportable Incineration System
TNB	Trinitrobenzene
TNT	Trinitrotoluene
UCL	Upper Confidence Limit
USACE	U.S. Army Corps of Engineers
UU UE	Unlimited Use Unrestricted Exposure
VCP	Vitrified Clay Pipe
VOC	Volatile Organic Compound
Weston	Roy F. Weston
WOE	Weight-of-Evidence
WWII	World War II
XRF	X-Ray Fluorescence

1. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy to determine if the remedy will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address these issues.

FYRs are required at sites that have completed remediation pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121 and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 Code of Federal Regulations [CFR] Section 300.430(f)(4)(ii)). Alabama Army Ammunition Plant (ALAAP) is a Federal facility on the National Priorities List and has a signed Federal Facility Agreement pursuant to Section 120 of CERCLA. Under this agreement, the Army, the U.S. Environmental Protection Agency (EPA), and the Alabama Department of Environmental Management (ADEM) are required to work cooperatively to address all known unacceptable risks to human health and the environment in accordance with CERCLA and the NCP.

This is the Fourth FYR for the ALAAP – Area B Superfund Site. The triggering action for this statutory review is the completion date for the previous FYR. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use unrestricted exposure (UUUE) of the property.

Although ALAAP – Area B consists of five operable units (OUs), only one (OU-7) is addressed in this Fourth FYR. To clarify which Area B sites are included or excluded from this FYR, Table 1-1 lists the OUs, study areas, and media included in each OU; a summary of the selected remedy; the current CERCLA status; and whether an FYR is required and included in this document. Additional information about the OUs or study areas within an OU is provided below:

- OU-1, Stockpiled Soil, is not included in this FYR. The remedy selected in the December 31, 1991 Record of Decision (ROD) was onsite thermal treatment of soil, onsite disposal of the treated soil, and offsite disposal of the asbestos-containing material (ACM) (Weston 1991). The remedial design was approved on September 28, 1992. The remedial action started on November 1, 1992, and was completed on March 1, 1995. OU-1 is not addressed in this FYR because this OU consisted of stockpiled soil that was remediated and disposed of, and the remedial action resulted in long-term protection to human health and the environment by leaving no residual risk.
- OU-4 is not included in this FYR because this OU addresses groundwater at the site for which an ROD has not yet been prepared. OU-7 includes all of the study areas in OU-2 and OU-6 and additional study areas not part of these OUs; OU-2 and OU-6 were designated as OUs to conduct interim remedial actions under Interim RODs (IRODs). The interim remedial actions have been completed.
- This FYR addresses the study areas and selected remedies in the OU-7 ROD. With minor exception, the remedy selected in the OU-7 ROD is land use controls (LUCs). However, at the request of EPA, this FYR also addresses the Remedial Action Objectives (RAOs) and effectiveness of the OU-2 and OU-6 IROD remedial actions for all study areas except Study Area 6. The latter was excluded from this FYR because the interim remedial actions resulted in UUUE (as opposed to LUCs).
- For the initial Remedial Investigation (RI), IROD, and IROD remedial actions, Study Area 10 was treated as a single study area. However, because actual remediation (excavation and

treatment of soils) was only required in the western part of Study Area 10, the area was divided into 10W and 10E for the Supplemental RI, Feasibility Study (FS), and OU-7 ROD. The OU-7 ROD presented the remedy for Study Area 10W and documented that no further action (NFA) was required for Study Area 10E.

It is noted here that the OU-2 and OU-6 IRODs were prepared and approved in 1994 and 1996, respectively, more than 20 years ago. These IROD documents were issued and approved at the time, according to the EPA guidance and format that were used at the time. It is acknowledged that EPA guidance and policy regarding IRODs have changed in the past 20 years, but the documents were acceptable at the time they were prepared, as they were approved by both agencies.

The ALAAP – Area B Superfund Site FYR was led by the U.S. Army Base Realignment and Closure (BRAC) Office with support from the U.S. Army Corps of Engineers (USACE) and Leidos, as the Army contractor. The review began on May 10, 2017, with a kick-off meeting attended by personnel from the aforementioned agencies. ADEM, as the support agency representing the State of Alabama, has reviewed all supporting documentation and provided input to EPA during the FYR process.

1.1 SITE BACKGROUND

The ALAAP – Area B Superfund Site is located in Talladega County, Alabama, 4 miles north of the nearest town, Childersburg, Alabama (Figure 1-1). The National Superfund database identification number is AL6210020008. The focus of this FYR is on soil, surface water, and sediment within the OU-7 study areas, which occur within an area of 2,235 acres. Groundwater is not addressed in this FYR because the groundwater is a separate OU for which an ROD has not yet been prepared. Figure 1-2 depicts the location of the study areas within the ALAAP – Area B OU-7.

ALAAP was established in 1941 on 13,233 acres of land near the junction of Talladega Creek and the Coosa River. Historically, ALAAP was an industrial complex with the primary function of producing explosives and propellants. The original mission of ALAAP was to manufacture 2,4,6-trinitrotoluene (TNT), dinitrotoluene (DNT), trinitrophenylmethylnitramine (tetryl), and single-base smokeless powder for cannon and small-arms ammunition in support of World War II (WWII) efforts. The plant also produced the necessary supporting chemicals for the manufacturing operations, including nitric and sulfuric acid, aniline, diphenylamine, oleum (40 percent sulfur trioxide and sulfuric acid), sellite (sodium sulfite), and N,N-dimethylaniline. Spent acids were recycled, and unrecoverable wastes resulting from operations were disposed of onsite by discharge to an unlined ditch.

Descriptions of the study areas, pertinent history, investigation histories, and other additional information may be found in the following documents:

- Supplemental RI Report – RI FS, ALAAP – Area B, Childersburg, Alabama (SAIC 2001)
- FS, ALAAP – Area B, Childersburg, Alabama (SAIC 2008)
- CERCLA ROD, ALAAP – Area B, Soils, Surface Water, and Sediment (SAIC 2010)
- Third FYR Report for the ALAAP – Area B Superfund Site, Talladega County, Alabama (Leidos 2014).

A Quitclaim Deed was signed on March 17, 2003, transferring ALAAP to the city of Childersburg. This deed contains land use restrictions, including prohibition against groundwater access, soil excavation, and any use other than commercial industrial. The environmental protection provisions of this deed are presented as “Exhibit C” of the Quitclaim Deed for ALAAP.

The city of Childersburg has since sold some parcels to private entities. NuSteel Fabricators (owner – Seven C’s LLC), a steel fabricating company, purchased adjacent 20.0- and 18.1-acre parcels

along Coosa Industrial Park First Road near the northern boundary of the former ALAAP – Area B property. Blair Block (owner – Blair Block LLC) purchased 37.56- and 12.0-acre parcels. Koldsteel (owner – Koldsteel Inc.) purchased a 2.0-acre parcel. Matthew O’Neal (owner – Matthew O’Neal) purchased a 3.0-acre parcel, and DCI South Properties (owner – DCI South Properties LLC) purchased a 14.5-acre parcel, also along Coosa Industrial Park First Road. Nippon Oil Lubricants America (owner – Nippon Oil Lubricants LLC) purchased a 20-acre tract along Highway 235 for the construction of a lubricant blending facility.

The city of Childersburg Local Redevelopment Authority (LRA) has implemented plans to advance the ALAAP property as an industrial park. To this end, logging of a planned area encompassing 1,920 acres was begun in 2012 and completed around 2015. Road improvement throughout the ALAAP property is also planned.

**Table 1-1. ALAAP – Area B OUs and Five-Year Review Status
Alabama Army Ammunition Plant, Childersburg, Alabama**

EPA Designation	Army Designation	In Current Five-Year Review	Study Areas Included in Each OU	Impacted Media	Further Action Required in the IROD or ROD	Summary of Selected Remedy	CERCLA Status/Phase	Five-Year Review Required
		Yes or No			Yes or No			Yes or No
OU-1	OU-2	No	31, 32, TC4A, TC4B – Stockpiled Soils	Soil	Yes	<ul style="list-style-type: none"> Incineration and/or stabilization of stockpiled materials until treatment and disposal criteria are met Disposal of treated material in the designated onsite disposal area 	ROD Approved December 1991 ROD Remedial Actions Complete	No FYR required; the remedy resulted in no residual risk to human health and the environment.
OU-2	OU-3	No ^b	Study Areas 6, 7, 10 ^a , and 21	Soil and sediment	Yes	<ul style="list-style-type: none"> Incineration and/or stabilization of metals and explosives-related contaminated soils and sediments, and disposal of treated material in the designated onsite disposal area Deactivation and grouting of concrete-encased VCP; excavation, onsite incineration, and onsite disposal of VCP 	IROD Approved November 1994 IROD Remedial Actions Complete	Separate FYR not required; OU-2 IROD study area remedies (except for Study Area 6) were technically reviewed in the OU-7 FYR. Study Area 6 remedial actions resulted in UU/UE.
OU-4	OU-1	No	Area B (site-wide) groundwater	Groundwater	Not Applicable	FS ongoing; ROD not yet prepared	FS ongoing	Not Applicable
OU-6	OU-4	No ^b	Study Areas 2, 10 ^a , 16, 17, 19, and 22	Soil	Yes	<ul style="list-style-type: none"> Incineration and/or stabilization of metals and explosives-related contaminated soils Disposal of treated material in the designated onsite disposal area Engineered landfill cap for Study Area 22 	IROD Finalized October 1996 IROD Approved March 1997 IROD Remedial Actions Complete	Separate FYR not required; OU-6 IROD study area remedies were technically reviewed in the OU-7 FYR.
OU-7	OU-1	No	Study Areas 5, 6, 9, 10E, 20, 25, 27, Gas Station, Transformer Storage Building, Downed Utility Poles with Transformers, Underground Storage Tanks, Fertilizer and Pesticide Storage	Soil, surface water, and sediment	No	<ul style="list-style-type: none"> NFA for UU/UE 	ROD Finalized August 2010 ROD Approved March 2012	No; these study areas were part of the OU-7 ROD but NFA for UU/UE was required.
OU-7	OU-1	Yes	Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 22, and 26; Building 6 – Coke Oven; and South Georgia Road Dump	Soil, surface water, and sediment	Yes	<p><u>All Study Areas</u></p> <ul style="list-style-type: none"> Implement LUCs to prevent future residential use of the study areas Monitor the effectiveness of the LUCs through annual inspections <p><u>Study Areas 21 and 26</u></p> <ul style="list-style-type: none"> Post signs warning against consumption of fish tissue at Study Areas 21 and 26 <p><u>Study Area 22</u></p> <ul style="list-style-type: none"> Implement LUCs to prevent excavation, digging, drilling, or other activities that may damage the landfill cap within Study Area 22 Monitor effectiveness of the LUCs and monitor for any damage to the landfill cap through annual inspections 	ROD Finalized August 2010 ROD Approved March 2012 OU-2 and OU-6 study areas were included in the OU-7 ROD and are technically reviewed in the OU-7 FYR	Yes

Notes: To avoid confusion, EPA OU designations are used throughout this FYR.

^a Under the OU-2 IROD, remediation (excavation and treatment of soils) was conducted for the western part of Study Area 10 (i.e., later designated as 10W); under the OU-6 IROD, investigation was conducted for the eastern part of Study Area 10 (i.e., 10E) and NFA was deemed necessary for 10E. The designations 10W and 10E are used in the Supplemental RI, FS, and OU-7 ROD.

^b RAOs implemented under the IRODs are addressed in the current FYR.

ALAAP = Alabama Army Ammunition Plant

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

EPA = U.S. Environmental Protection Agency

FS = Feasibility Study

FYR = Five-Year Review

IROD = Interim Record of Decision

LUC = Land Use Control

NFA = No Further Action

OU = Operable Unit

RAO = Remedial Action Objective

RI = Remedial Investigation

ROD = Record of Decision

UU/UE = Unlimited Use/Unrestricted Exposure

VCP = Vitriified Clay Pipe

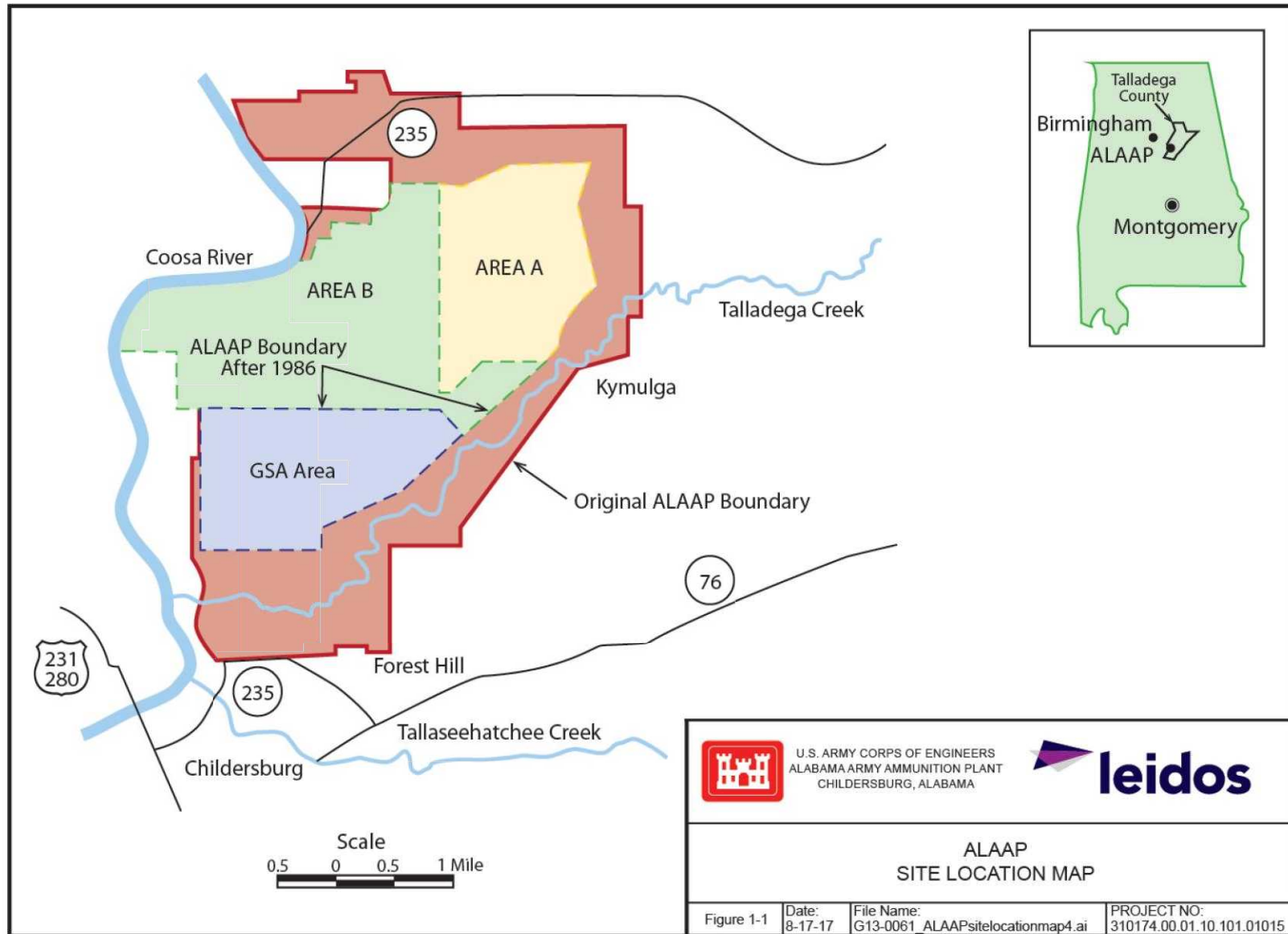
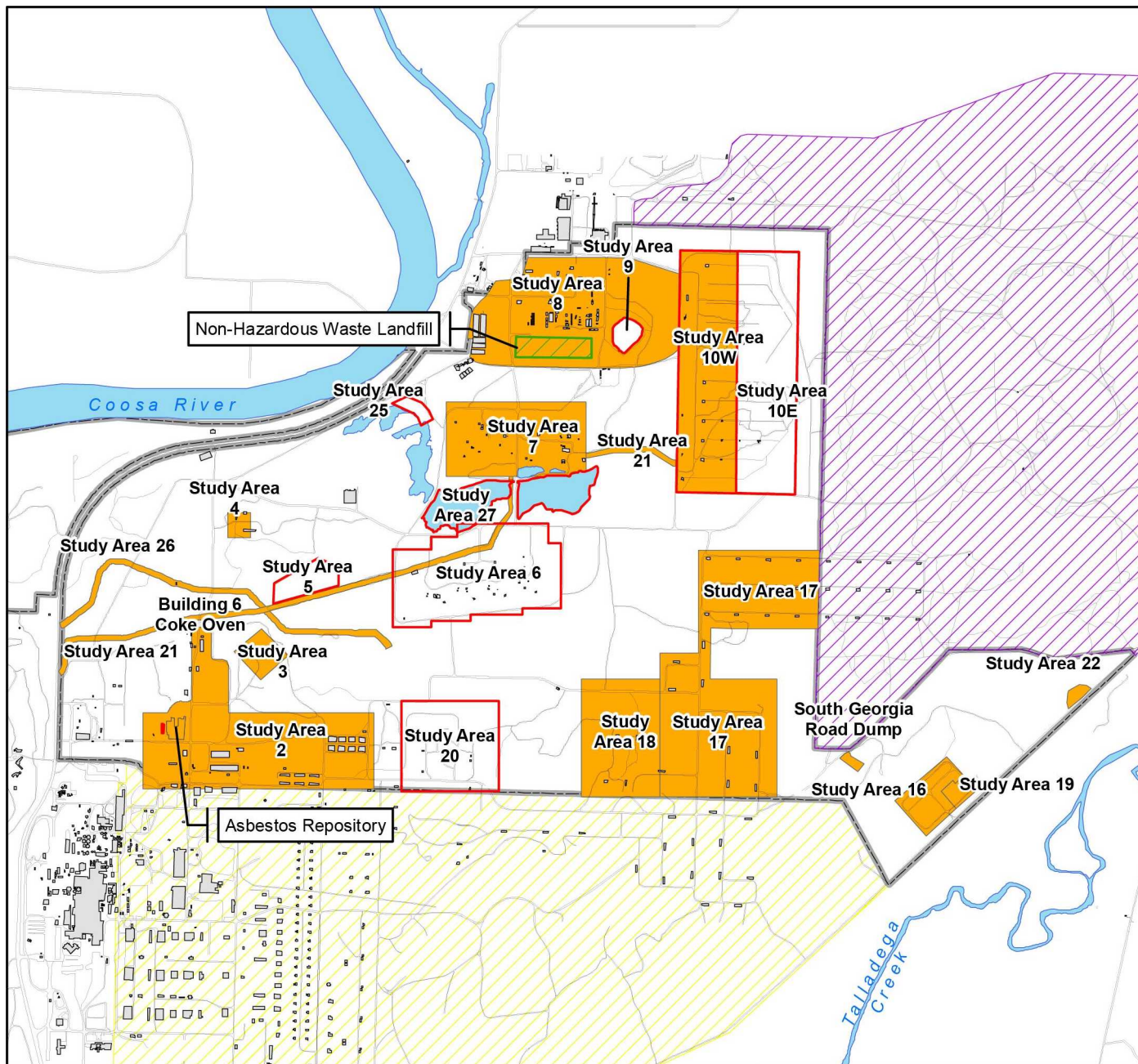


Figure 1-1. ALAAP Site Location Map



Legend

- Roads
- Building Foundation
- River/Water Bodies
- Study Areas
- Operable Unit 7 Study Areas
- Area A
- Area B
- GSA Area
- Non-Hazardous Waste Landfill

Note: Operable Unit 7 Study Areas included in the Five Year Review: Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 22, 26, Building 6 - Coke Oven, and South Georgia Road Dump



0 1,000 2,000 3,000 4,000
Feet



U.S. Army Corps of Engineers
Alabama Army Ammunition Plant

ALAAP - Area B Operable Unit 7 Study Areas Included in Five Year Review

PROJECT: \GIS_DATA\ALAAP\Projects\Five Year Review\
Figure 1-2 Area B OU-7.mxd

FIGURE: 1-2

DATE: 8/11/2017

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Alabama Army Ammunition Plant – Area B		
EPA ID: AL6210020008		
Region: 4	State: AL	City/County: Childersburg/Talladega
SITE STATUS		
NPL Status: Final		
Multiple OUs? No	Has the site achieved construction completion? Yes, construction completion has been achieved for OU-7 soils, sediment, and surface water, which is the subject of this FYR. Groundwater is not included in OU-7 and is not part of this FYR. Yes	
REVIEW STATUS		
Lead agency: Other Federal Agency If “Other Federal Agency” was selected above, enter Agency name: U.S. Army		
Author name (Federal or State Project Manager): Andy VanDyke		
Author affiliation: U.S. Army Base Realignment and Closure Division		
Review period: May 10, 2017 – August 25, 2017		
Date of site inspection: May 27, 2017		
Type of review: Statutory		
Review number: 4		
Triggering action date: September 5, 2013		
Due date (five years after triggering action date): September 5, 2018		

2. RESPONSE ACTION SUMMARY

2.1 BASIS FOR TAKING ACTION

The study areas in OU-7 are located in an area of planned industrial land use. Therefore, the people most likely to be exposed to contaminated environmental media are industrial workers. For this reason, the risk assessments evaluated risks to workers. Industrial workers may be exposed to contaminants in these media through incidental ingestion, absorption of chemicals through the skin, and inhalation of dust particles containing the chemicals or chemicals present in vapor form. The risk assessment also evaluated the chemicals present at the study areas and their potential to cause cancer or toxic effects to people. The primary chemicals of concern (COCs) at these sites are lead, explosives, and carcinogenic polynuclear aromatic hydrocarbons (PAHs). Most of the COCs are potential carcinogens. In addition, some may potentially cause noncancerous toxic effects to various parts of the body. For example, studies have shown that exposure to TNT, the DNTs, and tetryl may harm the liver. Exposure to lead may affect the nervous system. At these sites, the primary resources impacted by contamination are soil and sediment. Chemical contamination found in the soil or sediment was responsible for unacceptable worker risk. Remediation was necessary at these sites to allow the sites to be used as planned (i.e., for industrial use).

The study areas included in this FYR are listed in Table 1-1 and are described in the sections below. Each of these study areas required further action, as documented in the approved OU-7 ROD (SAIC 2010). Other study areas were included in the OU-7 ROD but are not addressed in this FYR because NFA was necessary to achieve UUE. The NFA study areas also are listed in Table 1-1. Specifics pertaining to the investigation and basis for action at each study area within OU-7 are provided below.

2.1.1 Study Area 2

Study Area 2 (included in OU-6 and OU-7) is the Smokeless Powder Facility (cannon and rifle powder). During a previous environmental survey (ESE 1981), 2,4-DNT was detected in soil samples. Additional sampling and a baseline human health risk assessment (HHRA) conducted during Phase I of the Supplemental RI identified 2,4-DNT as responsible for unacceptable risk under an industrial land use (SAIC 1996a). An explosives (2,4-DNT) hot spot was detected during Phase I of the Supplemental RI. As a result, Roy F. Weston (Weston) conducted a sampling program in September 1996 to delineate the extent of contamination around the hot spot so that remediation of the area could be conducted. Laboratory samples were analyzed for explosives and total lead. Neither 2,4-DNT nor any other explosives were detected. The excavation criterion for 2,4-DNT was 356 mg/kg. To be conservative, the soil around the hot spot was excavated under the OU-6 IROD. Supplemental RI and remediation confirmatory sampling indicated that no explosives remain in the soil at concentrations greater than 100 mg/kg. 2,4-DNT was detected at 99.3 mg/kg in one soil sample collected northeast of the excavation area. However, the Final Supplemental RI also identified PAHs as chemicals responsible for unacceptable risk under an industrial land use (SAIC 2001). Based on the FS evaluation, additional excavation of soil contaminated with PAHs was necessary to meet the planned industrial future land use and LUCs were required to prevent non-industrial use of the study area.

2.1.2 Study Area 3

The Sanitary Landfill and Lead Facility (Study Area 3) was located in the west-central portion of the current ALAAP – Area B and covered 7.5 acres. The area was used from the early 1940s until the late 1970s. Most of the fill material was domestic solid waste and building rubble. A Supplemental RI and baseline risk assessment indicated potential concerns for unrestricted use (i.e., residential) and ecological receptors at Study Area 3 but no concerns for the industrial and construction land use (SAIC 2001). An FS was conducted to evaluate elevated concentrations of metals in surface and subsurface soils at Study Area 3. A weight-of-evidence (WOE) screening conducted as part of the FS (SAIC 2008) concluded that

metals were not a concern to ecological receptors. However, human health concerns remain for the unrestricted use of Study Area 3 due to the presence of arsenic in surface soils (SAIC 2008). Based on the FS evaluation, further protective measures (i.e., LUCs) were required to address the residential COC (i.e., arsenic in surface soils) at Study Area 3.

2.1.3 Study Area 4

The Manhattan Project Area used a portion of ALAAP in the western part of Area B from 1943 to 1945 (DA 1978). The Manhattan Project Area was designed to produce 1,600 pounds (192 gallons) of heavy water per month, but records indicate that it produced less than 600 pounds (72 gallons) per month (QORE 2002). A total of 11,160 pounds (1,338 gallons) of heavy water were produced from January 1944 through July 1945. The heavy water process did not involve any radioactive materials. In 1945 and 1946, all buildings were removed from the Manhattan Project Area except for one small brick building, which was removed in 1995. Large concrete building footers, the basement, and other support structures were left in place. A Supplemental RI and baseline risk assessment conducted in 1995 identified lead as a COC for unrestricted land use (i.e., residential) and construction land use, and metals as ecological chemicals of concern (ecoCOCs) (SAIC 2001). An FS was conducted to further evaluate the potential concerns for Study Area 4 (SAIC 2008). Lead modeling conducted as part of the FS concluded that lead was not a concern for the future construction worker, and WOE analysis concluded that metals are not a concern to ecological receptors. However, human health concerns remained for the unrestricted land use (i.e., residential). Based on the FS evaluation, further protective measures (i.e., LUCs) were required to address the residential COC (lead) at Study Area 4.

2.1.4 Study Area 7

Study Area 7 was the Northern TNT Manufacturing Area containing four TNT production lines and one DNT production line. This area was razed and material was spread over a wide area during the demolition with only foundations and portions of the sewer system remaining. Formerly, wastewater from this area was discharged to the Red Water Ditch through wooden flumes, which carried the production wastes to the industrial sewers. Explosives-related contamination was identified in soil and groundwater samples from site investigations.

Environmental Science and Engineering (ESE) completed a baseline risk assessment for Study Area 7 in August 1992 as part of the initial RI (ESE 1992). The HHRA concluded that explosives-related contamination in both soil and groundwater was responsible for cancer risks exceeding the upper bound of the target risk range and noncancer hazard indices (HIs) exceeding the target of 1. Lead also was identified as a chemical that could pose potential health risks at the site. The ecological risk assessment (ERA) concluded that quotients for terrestrial organisms, particularly rabbits, exceed 1 due to the presence of explosives-related compounds (ESE 1992). ESE completed an RI FS for the Industrial Sewer System (ISS) in September 1991 (ESE 1991). The RI concluded that the ISS within Study Area 7 was contaminated with high levels of nitroaromatic compounds and that leakage from the manholes had occurred, as evidenced by contaminated soil surrounding them. The area of greatest soil contamination appeared to be in the area where the surface ditch from the bi- and tri-nitrating house entered the ISS. The RI also concluded that the ISS within Study Area 7 was discharging contamination to surface drainages such as the Red Water Ditch (ESE 1991). Based on these results, Weston conducted interim remedial actions and confirmatory sampling at the site from 1994 to 1996.

Contaminated soils were excavated and thermally treated at the onsite incinerator (hereafter referred to as the Transportable Incineration System [TIS]-20). The ash from incineration of soils containing explosives and meeting the disposal criteria was disposed of at the onsite disposal area (later known as the Non-Hazardous Waste Landfill [NHWL]). Soils and ash contaminated with lead and or not meeting the disposal criteria were stabilized and then disposed of at the onsite disposal area (i.e., the

NHWL). Asbestos was removed to a secure repository, which was the basement of former Building 2140. The secure repository is hereafter referred to as the Asbestos Repository.

The ISS in the study area was excavated and decontaminated, or grouted in place (QORE 2002). Subsequently, Science Applications International Corporation (SAIC) completed a supplemental risk assessment for Study Area 7 in 2001 after interim remedial actions were conducted (SAIC 2001). This risk assessment was part of the Supplemental RI and incorporated confirmation data collected during the interim remedial action and data that were unaffected by the response action. The risk assessment concluded that human health risks for the planned future land use were acceptable, but risks for the unrestricted residential use were unacceptable due to 2,4,6-TNT and manganese. In the WOE for human health risks, manganese was eliminated as a COC for unrestricted residential use. In the ERA, lead was identified as an ecoCOC in surface soil with a hazard quotient (HQ) greater than 1 but less than 10 (SAIC 2001). A WOE screening was not conducted as part of the FS for the remaining ecoCOCs at Study Area 7 because the results of the baseline ecological risk assessment (BERA) indicated that no further evaluation of ecological risk was warranted (SAIC 2008). Study Area 7 was included in the FS to address regulatory comments relative to unrestricted use of the site. Further protective measures (i.e., LUCs) were required to address the residential COCs at Study Area 7.

2.1.5 Study Area 8

Nitrobenzene, concentrated nitric acid, oleum, and sodium sulfite (sellite) were produced at the Acid Organic Manufacturing Area (Study Area 8). A former sulfur burning pit is also in this area (DA 1978). The Acid Organic Manufacturing Area covers 104 acres. Sulfur residues up to 1 inch in diameter were exposed on the ground surface in the sulfur storage area (ESE 1981).

Previous investigations (ESE 1993) identified an area of 27,000 square yards (5.5 acres) that was contaminated with sulfur and acid wastes. A Supplemental RI and baseline risk assessment conducted in 1995 identified nickel and iron as the COCs in soil based on the construction land use and metals and PAHs as COCs in soil based on unrestricted use (i.e., residential), and metals as ecoCOCs (SAIC 2001). No COCs were identified for industrial workers. The Technical Memorandum Justification for NFA for Phase I Transfer of ALAAP Study Areas 7, 8, 9, 10, 21, 25, and 26 (SAIC 2000) and the WOE screening conducted as part of the FS concluded that there were no concerns for human health (based on the industrial and construction land use) and the environment (SAIC 2008). However, concerns remained for the unrestricted land use due to residual metals and PAHs in soil. Based on the FS, further protective measures (i.e., LUCs) were required to address the residential COCs at Study Area 8.

2.1.6 Study Area 10W

The Tetryl Manufacturing Area (Study Area 10) consisted of 12 manufacturing lines where tetryl was produced. Extensive amounts of lead were used in the piping, floors, and fittings of the nitration houses. The buildings have been razed and all that remains of each line are the concrete foundations of the buildings and piles of concrete debris. The area was divided into eastern and western halves (10E and 10W) during the Supplemental RI, which was completed in 2001. The areas were evaluated separately because remediation had been conducted on the western half (which contains the manufacturing area), and the purpose of the associated risk evaluation was to confirm that the remedial actions were protective. At Study Area 10W, the investigation was conducted to confirm the absence of unacceptable risk.

ESE completed an RI FS for the ISS in September 1991 (ESE 1991). The RI concluded that the ISS within Study Area 10 was contaminated with tetryl, nitrocellulose, and 1,3,5-trinitrobenzene (TNB), and leakage from the manholes had occurred, as evidenced by contaminated soil surrounding them.

ESE completed a baseline risk assessment for Study Area 10 in August 1992 as part of the initial RI (ESE 1992). The HHRA, which focused primarily on the western half, concluded that noncancer risks to industrial workers reach the target HI of 1 and that cancer risks for residents exceed the target

(i.e., greater than 1×10^{-4}) due to tetryl in soil. Lead also was identified as a chemical in soil that could pose potential health risks at the site. The ERA concluded that HQs for lead and tetryl exceed 1. However, considerable uncertainty is associated with the tetryl results because little was known concerning its toxicity to wildlife at the time the risk assessment was conducted (ESE 1992).

Based on the results of the RI FS and risk assessment, Weston conducted interim remedial actions at Study Area 10W from 1994 to 1996. Contaminated soils were excavated and thermally treated. The ash from incineration of soils containing explosives and meeting the disposal criteria was disposed of at the onsite disposal area (i.e., the NHL). Soils and ash contaminated only with lead and or not meeting the disposal criteria were stabilized and then disposed of at the onsite disposal area (i.e., the NHL). The ISS in the study area was excavated and decontaminated, or grouted in place (QORE 2002).

Subsequently, SAIC completed a supplemental risk assessment for Study Area 10 (with 10E and 10W evaluated separately) in 2001 after interim remedial actions were conducted (SAIC 2001). This risk assessment was part of the Supplemental RI and incorporated confirmation data collected during the interim remedial action and data that were unaffected by the response action. For Study Area 10E, additional WOE arguments pertaining to the risks were presented in the FS (SAIC 2008). As a result, the FS concluded that NFA was recommended for Study Area 10E. For Study Area 10W, the HHRA concluded that risks were acceptable for the planned future land use but unacceptable for unrestricted future use due to the presence of lead in the soil. In the ERA for Study Area 10W, lead was identified as an ecoCOC with an HQ greater than 10. In comparison to the 1992 ERA, additional information was available to address the toxicity of tetryl to wildlife at the time the Supplemental RI was conducted. The latter risk assessment used literature and published or derived toxicity values to evaluate tetryl in plants and mammals and concluded that any residual concentrations did not pose harm to ecological receptors. Further protective measures (i.e., LUCs) were required to address the lead at Study Area 10W.

2.1.7 Study Area 16

The Flashing Ground covers 16.5 acres and consists of four trenches that were used after WWII to primarily dispose of smokeless black powder by open burning. Combustible trash also was burned (QORE 2004, SAIC 2001). Flumes were located at the ends of at least two burning trenches to capture solids generated during washout operations (Weston 1996a).

ESE conducted exploratory and confirmatory surveys (ESE 1981), an RI (ESE 1986), and a Supplemental RI (ESE 1993) at Study Area 16. ESE's results showed that no contamination was detected in surface water and sediment samples, but soil was contaminated with nitroaromatic residues along with elevated lead concentrations. In 1995, SAIC conducted a Phase I sampling and analysis program as part of their Supplemental RI. The Draft Final Supplemental RI (SAIC 1996a) concluded that remedial actions were necessary to address explosives-related compounds and lead contamination in the soils at Study Area 16. This resulted in the inclusion of this study area in the OU-6 IROD (Weston 1996a).

An interim removal action was completed in 1996 through 1999 under the OU-6 IROD (Weston 1996a). Weston excavated explosives-contaminated soils and transported them to the TIS-20 for thermal treatment. Ash from the incineration of soils containing explosives that met the disposal criteria was disposed of at the onsite disposal area (i.e., the NHL). Subsequently, soils containing lead contamination (addressed by Environmental Chemical Corporation [ECC]) were stabilized and then landfilled at the onsite disposal area (i.e., the NHL) (ECC 1998).

The Final Supplemental RI (SAIC 2001), completed after interim remedial actions had concluded, incorporated confirmation data collected during the interim remedial action and data that were unaffected by the response action. The baseline risk assessment identified metals, 2,4,6-TNT, and PAHs as COCs for protection of human health and metals as COCs for ecological receptors. An FS was conducted to further evaluate the potential concerns with metals, 2,4,6-TNT, and PAHs at Study Area 16. The WOE screening conducted as part of the FS concluded that concerns remained to human health based on unrestricted land

use (i.e., residential). No concerns remained for the industrial and construction land use at Study Area 16. Further protective measures (i.e., LUCs) were required to address the residential COCs (i.e., metals, PAHs, and 2,4,6-TNT) at Study Area 16. The two metals identified as ecoCOCs were eliminated following the WOE evaluation in the FS as a result of risk management decisions.

2.1.8 Study Area 17

Study Area 17 (included in OU-6) is the Propellant Shipping Area. The lower portion of the area was used as a shipping area for smokeless powder while the upper portion was used for shipping high explosives (USATHAMA 1978). The 1986 RI (ESE 1986) noted a low incidence of nitroaromatic compounds detected in the soil sampled from this area. During Phase I of the Supplemental RI, explosives hot spots were detected in surface soil screening samples, and 2,4-DNT was identified as the primary contributor to unacceptable risk under an industrial land use (SAIC 1996a).

An interim remedial action was completed in 1996 under the OU-6 IROD (Weston 1996a) as 2,4-DNT contaminated soils were excavated and transported to the TIS-20 for thermal treatment (Weston 1996a, 1996b, 1996c). Ash from incineration of soils and meeting the disposal criteria was landfilled at the onsite disposal area (i.e., the NHWL). Confirmatory samples were collected to demonstrate that the contamination had been removed.

The Supplemental RI and baseline risk assessment of Study Area 17, completed after interim remedial actions had concluded, incorporated confirmation data collected during the interim remedial action and data that were unaffected by the response action. The baseline risk assessment identified metals, including aluminum, arsenic, barium, iron, and manganese, as COCs for either human or ecological receptors (SAIC 2001). An FS was conducted to further evaluate the potential concerns with metals at Study Area 17. The WOE screening conducted as part of the FS concluded that concerns to human health remained for arsenic in the soils based on unrestricted land use (i.e., residential) (SAIC 2008). There were no concerns for the industrial and construction land use and the ecological receptors at Study Area 17. Further protective measures (i.e., LUCs) were required to address the residential COC (i.e., arsenic) at Study Area 17.

2.1.9 Study Area 18

The Blending Tower Area (Study Area 18) was an area of approximately 50 acres where smokeless powder was mixed to make it more homogeneous. During the blending operation, the powder was pneumatically moved to an upper bin and then dropped over an umbrella into a lower bin. This procedure was repeated twice (DA 1978). A Supplemental RI and baseline risk assessment identified metals as COCs in soils based on unrestricted human use (based on assumed residential use) and for ecological receptors at Study Area 18. However, planned and likely human uses of the land (industrial and construction) were not a concern (SAIC 2001). An FS was conducted to evaluate elevated concentrations of metals in surface and subsurface soils at Study Area 18. The WOE screening conducted as part of the FS concluded that concerns to human health remained based on unrestricted use (i.e., residential) but no concerns for the ecological receptors at Study Area 18 (SAIC 2008). Based on the FS, further protective measures (i.e., LUCs) were required to address the residential COC (i.e., arsenic) at Study Area 18.

2.1.10 Study Area 19

The Lead Remelt Facility (Study Area 19) is a 350- by 550-foot area originally used for flashing explosives (SAIC 2001). The area contained a thick concrete flashing rack barricade and a concrete slab for flashing activities (ECC 1998). Later, the site was used for remelting and recovering lead from piping and equipment by pouring hot liquid lead into lead ingots as part of the demolition activities conducted in the former TNT and tetryl production areas (QORE 2004, Weston 1996d).

ESE conducted exploratory and confirmatory surveys (ESE 1981), an RI (ESE 1986), and a Supplemental RI (ESE 1993) at Study Area 19. Soil and groundwater samples were collected. Numerous

large pieces of lead, some weighing several pounds, were identified on the soil surface in this area. ESE's results showed no detectable contamination in groundwater but high levels of lead in the soil. Tests also confirmed the leachability of the lead (ESE 1991, 1992).

In 1995, SAIC conducted a Phase I sampling and analysis program as part of their Supplemental RI. The Draft Final Supplemental RI (SAIC 1996a) concluded that remedial actions were necessary to address lead contamination in the soils at Study Area 19. An interim removal action was completed in 1998 under the OU-6 IROD (Weston 1996a) in which lead-contaminated soils from Study Area 19 were excavated and stabilized using an onsite pug mill (ECC 1998). Treated soils were landfilled at the onsite disposal area (i.e., the NHWL). Confirmatory samples were collected to demonstrate that the lead contamination had been removed.

The Final Supplemental RI (SAIC 2001), completed after interim remedial actions had concluded, incorporated confirmation data collected during the interim remedial action and data that were unaffected by the response action. The baseline risk assessment identified arsenic as a COC based on protection of human health (based on assumed residential land use) and concluded that there were no concerns for the industrial and construction land use and ecological receptors. An FS was conducted to further evaluate the potential concerns with arsenic at Study Area 19 (SAIC 2008). The WOE screening conducted as part of the FS concluded that concerns to human health remained for arsenic in the soils based on unrestricted land use (i.e., residential) and that further protective measures (i.e., LUCs) were required to address the residential COC (i.e., arsenic) at Study Area 19.

2.1.11 Study Area 21

The Red Water Ditch collected and carried surface runoff and industrial process wastewaters from the Acid Organic Manufacturing Area (Study Area 8) and the Tetryl Manufacturing Area (Study Area 10) (DA 1978). The areas that drained to the Red Water Ditch were involved in the production of acids (sulfuric and nitric), organic compounds (diphenylamine, aniline, and N,N-dimethylaniline), and explosives and their process byproducts (TNT, DNT, and tetryl). Other organic compounds (benzene and toluene) and inorganic compounds (sodium, sulfite, sodium carbonate, and elemental sulfur) also were stored in these areas that fed the Red Water Ditch.

An interim removal action was completed in 1996 under the OU-2 IROD (Weston 1994a) as TNT sediments from the Red Water Ditch and tetryl-contaminated sediments from the lower portions of the northern tributary of the Red Water Ditch (Tributary No. 2) were excavated and then thermally treated at the TIS-20 (Weston 1995a). The ash from incineration of sediments containing explosives and meeting the disposal criteria was disposed of at the onsite disposal area (i.e., the NHWL). Sediments and ash contaminated only with lead and or not meeting the disposal criteria were stabilized and then disposed of at the onsite disposal area (i.e., the NHWL).

Subsequently, a Supplemental RI and baseline risk assessment of Study Area 21 (SAIC 2001) did not identify any threats to human health based on exposures to soil, surface water, or sediment, but there were potential concerns regarding ingestion of fish from the Red Water Ditch by hypothetical residents and recreational receptors. In addition, the RI identified potential concerns with ecological species exposed to surface water and sediment at the Red Water Ditch. An FS was conducted to further evaluate the potential concerns at Study Area 21 (SAIC 2008). Although the Technical Memorandum Justification for NFA for Phase I Transfer of ALAAP Study Areas 7, 8, 9, 10, 21, 25, and 26 (SAIC 2000) concluded that NFA was recommended based on the planned industrial reuse, concerns remained about ingestion of fish from the Red Water Ditch by hypothetical residents and recreational receptors. It was determined that further protective measures (i.e., LUCs) were required to address this concern at Study Area 21.

2.1.12 Study Area 22

Study Area 22 is the Demolition Landfill, which consists of a semicircular landfill in a swale extending approximately 500 feet along a perimeter road at the far eastern corner of Area B. Previous soil sampling identified lead residues at concentrations above background in two samples and low concentrations of tetryl (ESE 1981). The Supplemental RI HHRA for industrial land use identified arsenic, lead, and PAHs as chemicals responsible for unacceptable worker risks (SAIC 2001). Based on this risk assessment, an engineered landfill cap was constructed for the site, thus isolating the contaminated soil. ECC placed a synthetic membrane liner overlain by clay and seeded topsoil layers over the landfill in October 1998 (ECC 1999). Further protective measures (i.e., LUCs), including restrictions on intrusive activities, and periodic maintenance were required to maintain the integrity of the engineered cap at Study Area 22.

2.1.13 Study Area 26

The Crossover Ditch (Study Area 26) drains surface waters from the Leaseback Area, the Rifle Powder Finishing Area, part of the northern and all of the southern portions of the Propellant Shipping Area, the southern portion of the Southern TNT Manufacturing Area, and the Sanitary Landfill and Lead Facility. Two beaver dams had been constructed on the Crossover Ditch. More recent lack of beaver activity in the area of the former Beaver Ponds has caused the ponds to be intermittently dry at periods throughout the year. Although the Crossover Ditch drains areas that produced nitrocellulose and smokeless powder, the ditch also passes adjacent to other study areas on ALAAP and contaminants from other sources may enter the drainage. Other identified potential sources of contaminants included the coal pile at the Bowater, Inc. power plant; the Sanitary Landfill and Lead Facility; the pipe flashing area immediately east of the Sanitary Landfill and Lead Facility (Study Area 3); and the large industrial waste reservoir on Bowater, Inc. land directly south of the Rifle Powder Finishing Area. The Crossover Ditch collects and discharges surface waters generated on or adjacent to ALAAP property into the Coosa River (ESE 1981).

A Supplemental RI and baseline risk assessment conducted in 1996 did not identify any potential threats to human health based on exposures to surface water or sediment, but there were potential concerns with ingestion of fish from the Crossover Ditch by hypothetical residents. In addition, the RI identified potential concerns with ecological species exposed to surface water and sediment at the Crossover Ditch (SAIC 2001). Although the Technical Memorandum Justification for NFA for Phase I Transfer of ALAAP Study Areas 7, 8, 9, 10, 21, 25, and 26 (SAIC 2000) concluded that NFA is recommended based on the planned industrial reuse, concerns remained about ingestion of fish from the Crossover Ditch by hypothetical residents. The WOE screening conducted as part of the FS concluded that human health concerns remained related to ingestion of fish tissue (SAIC 2008). Based on the FS, further protective measures (i.e., LUCs) were required to address the human health concerns at Study Area 26. The WOE screening conducted as part of the FS concluded that no concerns to ecological receptors remained at Study Area 26 (SAIC 2008).

2.1.14 Building 6 – Coke Oven

The Coke Oven in Building 6 was partially constructed during the 1950s-era plant update but was never finished. The structure included a concrete-covered pit of unknown dimensions beneath a concrete slab next to Building 6. The Earth Technology Corporation (TETC) Community Environmental Response Facilitation Act (CERFA) Report (TETC 1994) identified the pit as a former burning pad where transformer oil was poured onto copper wire to burn off the insulation covering the wire. It is not known whether the transformer oil contained polychlorinated biphenyls (PCBs). The concrete pad is still present; however, the pit is not visible.

A Supplemental RI and baseline risk assessment conducted in 1996 identified arsenic, iron, and manganese in soils as COCs based on unrestricted human use (i.e., assumed residential) and aluminum.

arsenic, lead, and zinc based on protection of ecological receptors. However, planned and likely human uses of the land (industrial and construction) were not a concern (SAIC 2001). An FS was conducted to evaluate elevated concentrations of metals in surface and subsurface soils at Building 6 – Coke Oven. The WOE screening conducted as part of the FS concluded that concerns to human health remained based on unrestricted land use (i.e., residential) but no concerns for the ecological receptors (SAIC 2008). Based on the FS, further protective measures (i.e., LUCs) were required to address the residential COC (i.e., arsenic) at Building 6 – Coke Oven.

2.1.15 South Georgia Road Dump

The Environmental Baseline Survey (EBS) identified a former dump area south of Old Georgia Road on the southeastern corner of Area B between Study Areas 16 and 17 (SAIC 2000). Debris observed in this area included roofing shingles, powder can rings, randomly scattered slag from a nearby study area, and exposed and partially exposed rusted drums. In addition to the visible presence of surface and shallow subsurface debris, stressed vegetation was evident in the area. Significant concentrations of explosives or lead were not detected in groundwater samples from this area compared to other ALAAP wells (SAIC 2001).

Field investigations were conducted in 2001, 2002, and 2004 over a broad area of surface disturbance and debris observed at the site. The field investigations included intrusive sampling through shallow trenching combined with screening-level soil surveys for lead using X-ray fluorescence (XRF) analyses and confirmatory laboratory analyses. The results indicated that the observed debris was predominantly surficial. The debris was not observed at significant depth at the trenched locations, which were excavated to bedrock that ranged in depth from 2 to 5.5 feet below land surface (BLS). The XRF screening and laboratory confirmation analyses indicated that the horizontal and vertical extent of lead contamination was fully delineated. Lead modeling was conducted to assess the potential for adverse health effects to human health. Blood lead levels for industrial and construction workers at the 95 percentile were below the target criteria (10 µg dL) for surface and subsurface soil, were determined to be acceptable, and did not indicate the need for site remediation. Additional soil sampling was conducted in 2007 to verify that volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) were not a concern at the South Georgia Road Dump. Trace concentrations of VOCs and SVOCs were detected in the shallow soil. However, the concentrations were below preliminary remediation goals (PRGs) established for residential soil (SAIC 2007). Although this site was not evaluated in the FS, implementation of LUCs would be required at the South Georgia Road Dump because lead would remain in soil at concentrations exceeding residential criteria (i.e., unrestricted land use). Further protective measures (i.e., LUCs) were required to address the residential COC (i.e., lead) at the South Georgia Road Dump and were documented and approved as part of the OU-7 ROD (SAIC 2010).

2.2 RESPONSE ACTIONS

The initial response actions for a subset of the OU-7 study areas were interim remedial actions conducted in the 1990s under two separate IRODs (see Table 1-1): 1) Study Areas 7, 10, and 21 were addressed in an IROD for OU-2; and 2) Study Areas 2, 10, 16, 17, 19, and 22 were addressed in an IROD for OU-6. The IRODs for OU-2 and OU-6 were incorporated into the OU-7 ROD as a component of the Final Selected Remedy (see Table 1-1). No removal actions or other responses were conducted for these study areas prior to the IRODs.

Note that study Area 10 was included as a single study area during interim remedial actions. Therefore, the OU-2 and OU-6 IRODs reference Study Area 10. Since actual remediation (excavation and treatment of soils) was only required in the western part of Study Area 10, the area was divided into 10W and 10E for the Supplemental RI, FS, and OU-7 ROD. The OU-7 ROD documented that NFA was required for Study Area 10E.

OU-7 response actions were conducted for Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 22, and 26; Building 6 – Coke Oven; and South Georgia Road Dump. No response actions were necessary for OU-7 Study Areas Study 5, 6, 9, 10E, 20, 25, 27, Gas Station, Transformer Storage Building, Downed Utility Poles with Transformers, Underground Storage Tanks, and Fertilizer and Pesticide Storage because risks for these sites are acceptable for UU UE. Therefore, these latter sites are not included in this FYR (see Table 1-1).

2.2.1 Study Areas 7, 10, and 21 (OU-2) IROD RAOs and Remedy Components

The interim remedy for OU-2 was selected in an IROD dated November 15, 1994. The RAO for this interim remedy was to prevent human exposure to soil and sediment contaminated with explosives and metals. The remedial design was approved on November 17, 1994. The IROD remedy consisted of the following.

Incineration Stabilization of Metals- and Explosives-Contaminated Soil and Sediment

- Clear, survey, and grid areas; perform soil and sediment sampling and analysis to delineate contamination by explosives (2,4,6-TNT, 1,3-dinitrobenzene [DNB], and tetryl) and lead.
- For contaminated areas, excavate soil and sediment until excavation criteria are satisfied, screen materials, transport materials to the TIS-20 site in Area B, and treat materials by incineration and or stabilization until treatment and disposal criteria are satisfied.
- Decontaminate oversized materials by crushing or shredding and treatment at the TIS-20 site or by high-pressure water washing and disposal in the backfill area.
- Expand the existing onsite disposal area (i.e., the NHL) for final placement of treated materials.
- Backfill excavated areas in Study Areas 6 and 7 and rough-grade to pre-excavated contours; backfill Study Area 21 to the elevation of the surrounding banks of the Red Water Ditch.
- Close the disposal area (i.e., the NHL) in accordance with the existing approved permit application for treated soil (*Treated Soil – Backfill Area Permit Application for the Alabama Army Ammunition Plant Stockpile Soils Area Operable Unit*, March 1994 [Weston 1994b]).
- Treat contaminated process, sampling, and decontamination wastewaters in the TIS-20 aqueous waste treatment system; reuse water for site dust control and process makeup.
- Conduct confirmatory soil and sediment sampling and analysis to ensure that excavation criteria have been satisfied.
- Excavated materials that contain asbestos (e.g., tiles, fragments) will be separated during feed preparation activities at the TIS-20 site.

Deactivation and Grouting of Concrete-Encased Vitrified Clay Pipe (VCP); Excavation, Onsite Incineration, and Onsite Disposal of VCP

- Locate and survey the existing VCP sewer lines and manholes.
- Sample overlying soil to determine compliance with excavation criteria, excavate to the depth of the sewer, visually inspect the interior and exterior of the sewer, remove gross contamination, and treat materials at the TIS-20 site or other approved methods and procedures.
- Remove nonencased sewer lines and manholes, transport materials to the TIS-20 site for decontamination by high-pressure water washing or other approved methods, and dispose of decontaminated materials in the backfill area (i.e., the NHL).

- Sample and analyze soil around sewer lines and manholes for contamination and excavate as necessary to achieve excavation criteria.
- Screen and transport contaminated soil and sediment to the TIS-20 site for treatment by incineration and or stabilization.
- Where sewer lines are encased in concrete, visually inspect the interior, remove gross contamination, treat materials at the TIS-20 site or by other approved methods and procedures, water wash, and grout cement in place after decontamination.
- Where lines are crushed or broken, visually inspect and remove gross contamination, excavate oversized (2-inch) materials, transport oversized materials to the TIS-20 site and decontaminate for disposal in onsite backfill, blend undersized materials with surrounding soil using approved methods, and transport materials to the TIS-20 site for treatment by incineration and or stabilization.
- Portions (10 percent) of the decontaminated VCP will be tested to ensure adequate decontamination. Although not expected, if adequate decontamination cannot be demonstrated using Webster's Reagent (due to the porosity of the pipe), a portion of the decontaminated pipe will be crushed and analyzed for parameters outlined in the excavation criteria. If Webster's Reagent is used, there is no numerical quantifiable decontamination criterion. A change of color will indicate that 2,4,6-TNT is present at concentrations above 15 µg cm².
- If decontamination criteria are exceeded, the piping will be decontaminated again, tested, and disposed of in the backfill area if criteria are satisfied. Decontaminated piping that fails to meet the decontamination criteria after two water washings will be crushed, blended with contaminated soil, treated at the TIS-20 site, and disposed of in the onsite backfill area.
- Conduct confirmatory soil sampling around and below the removed pipe to ensure that excavation criteria are satisfied.

The performance standards for OU-2 are listed in Tables 2-1 and 2-2.

**Table 2-1. Excavation Cleanup Goals for OU-2 and OU-6
Alabama Army Ammunition Plant, Childersburg, Alabama**

Compound/ Analyte Class	Compound/Analyte	Excavation Criteria (mg/kg)	
		Area B Soil, OU-2	Area B Soil, OU-6
Explosives	1,3-DNB	>1	>1
	2,4-DNT	----	>356
	2,6-DNT	----	>356
	Tetryl	>5,000	>5,000
	1,3,5-TNB	----	>36.7
	2,4,6-TNT	>647	>348
Metals (total)	Lead	>500	>400

Source: OU-2 IROD (Weston 1994a) and OU-6 IROD (Weston 1996a).

DNB = Dinitrobenzene

DNT = Dinitrotoluene

IROD = Interim Record of Decision

OU = Operable Unit

Tetryl = Trinitrophenylmethylnitramine

TNB = Trinitrobenzene

TNT = Trinitrotoluene

**Table 2-2. Disposal Criteria for OU-2 and OU-6 Incinerated Material
Alabama Army Ammunition Plant, Childersburg, Alabama**

COC	Concentration	Units
Explosives		
2,4,6-TNT	<1	mg/kg
Metals^a		
Arsenic	<5	mg/L
Barium	<100	mg/L
Cadmium	<1	mg/L
Chromium	<5	mg/L
Lead	<5	mg/L
Mercury	<0.2	mg/L ^b
Silver	<5	mg/L
Selenium	<1	mg/L

Source: OU-2 IROD (Weston 1994a) and OU-6 IROD (Weston 1996a).

^a Concentrations for metals are for the TCLP extract.

^b 4 mg/kg using the total metals analytical method.

COC = Chemical of Concern

IROD = Interim Record of Decision

OU = Operable Unit

TCLP = Toxicity Characteristic Leaching Procedure

TNT = Trinitrotoluene

2.2.2 Study Areas 2, 10, 16, 17, 19, and 22 (OU-6) IROD RAOs and Remedy Components

The interim remedy for OU-6 was selected in an IROD dated October 20, 1996. The RAO was to prevent human exposure to soil and sediment contaminated with explosives and metals. EPA approved the interim remedy on March 27, 1997, and it consisted of the following:

- Clear, survey, and grid areas; perform soil and sediment sampling and chemical analysis to delineate explosives and metals contamination.
- Use ground-penetrating radar or test pits to locate suspected burning trenches in Study Areas 16 and 19.
- For contaminated areas (except Study Area 22), excavate soil until excavation criteria are satisfied, transport materials to the TIS-20 site in Area B, treat materials by incineration and/or stabilization until treatment and disposal criteria are satisfied, and dispose of treated material in the onsite backfill area (i.e., the NHWL). Study Area 22 will be addressed using an engineered landfill cap in accordance with the remedial option identified in the Draft Final FS (SAIC 1996b).
- If necessary, expand the existing onsite disposal area (i.e., the NHWL) for final placement of treated materials.
- Decontaminate oversized materials by crushing or shredding and treatment at the TIS-20 site or by high-pressure water washing; dispose of in the backfill area (i.e., the NHWL).
- Treat contaminated process, sampling, and decontamination wastewaters in the TIS-20 aqueous waste treatment system; reuse water for site dust control and process makeup.
- Conduct confirmatory soil and sediment sampling and chemical analysis to ensure that excavation criteria have been satisfied.
- Backfill excavated areas with uncontaminated borrow soil and rough-grade to pre-excavated contours.
- Close the onsite disposal area (i.e., the NHWL) in accordance with the existing approved permit application for treated soil (*Treated Soils – Backfill Area Permit Application for the Alabama Army Ammunition Plant Stockpile Soils Area Operable Unit* [Weston 1994b] and

Treated Soils – Backfill Area No. 2 Permit Application for the Alabama Army Ammunition Plant Stockpile Area Operable Unit [Weston 1994c]).

- Test portions of the decontaminated concrete slabs or structures to ensure adequate decontamination. If Webster's Reagent is used, there is no numerical quantifiable decontamination criterion. A change of color will indicate that 2,4,6-TNT is present at concentrations above 15 µg/cm².

The selected remedy for the Study Area 22 Demolition Debris Landfill, an OU-6 study area, was an engineered cap. The cap was constructed in accordance with the remedial option identified in the Draft Final FS (SAIC 1996b).

The performance standards for OU-6 are listed in Tables 2-1 and 2-2.

2.2.3 OU-7 RAOs and Remedy Components

The RAOs for OU-7 are as follows:

- Cost effectively reduce the toxicity, mobility, and/or volume of study area chemicals in a timely manner to levels that are protective of human health and the environment.
- Minimize exposure risks (i.e., ingestion, inhalation, and dermal pathways) posed to human health and the environment through treatment of contaminated media or by providing an adequate physical barrier between the contaminated media and the receptor.
- Restore each study area to a condition that is consistent with future land use requirements.

As stated above, the IRODs for OU-2 and OU-6 were incorporated into the OU-7 ROD as a component of the Final Selected Remedy for OU-7.

The remedy components for all study areas in OU-7 include the use of LUCs, enforceable use restrictions, administrative controls, and inspections to protect human receptors from contact with elevated concentrations of COCs in soil (see Table 1-1). The LUCs focus on restricting land use to allow for industrial purposes only.

The remedy components for Study Area 2 in OU-7 include the excavation of soil containing PAHs above the industrial/construction RGOs; offsite disposal of the soil in a secure landfill, such as a Resource Conservation and Recovery Act (RCRA) Subtitle D landfill; collection of confirmation and waste characterization samples; and LUCs to prohibit the residential use of the property (see Table 1-1). Study Area 2 was the only area requiring cleanup actions in OU-7. Study Area 2 cleanup levels are provided in Table 2-3.

**Table 2-3. Cleanup Levels for OU-7 Study Area 2
Alabama Army Ammunition Plant, Childersburg, Alabama**

Chemical of Concern	Human Health RGO (Industrial/Construction)
Benzo(a)anthracene	55 mg/kg
Benzo(a)pyrene	5.5 mg/kg
Benzo(b)fluoranthene	55 mg/kg
Benzo(k)fluoranthene	548 mg/kg
Dibenzo(a,h)anthracene	5.5 mg/kg
Indeno(1,2,3-cd)pyrene	55 mg/kg

OU = Operable Unit
RGO = Remedial Goal Option

2.3 STATUS OF IMPLEMENTATION

Study areas included in this FYR have been addressed under IRODs or RODs for OU-2, OU-6, and OU-7. The following sections describe the actions completed for each OU.

2.3.1 Study Areas 7, 10, and 21 (OU-2) Remedy Implementation

The remedy for Study Areas 7, 10, and 21 within OU-2 was implemented in accordance with the OU-2 IROD dated November 15, 1994. The remedy components outlined above were implemented. The remedial design was approved on November 17, 1994. The remedial action started on December 19, 1994, and was completed on July 1, 1998. Weston submitted the Draft Project Closeout Reports for both OU-2 and OU-6 in July 1998.

Weston sampled Study Area 7 on 50-foot grids, and samples were screened for explosives. Samples also were analyzed for lead. A screening criterion of 647 mg kg of 2,4,6-TNT was used as the guideline for remediation. Based on the Weston investigation, portions of Study Area 7 that contained explosives contamination exceeding 647 mg kg of 2,4,6-TNT were remediated to concentrations of 100 mg kg of 2,4,6-TNT.

Excavation of soil was conducted at Study Area 10 between September and December 1995. The excavation criterion selected for tetryl was 5,000 mg kg (Weston 1996b). A few samples also contained lead in excess of the excavation criterion (500 mg kg) (Weston 1996b). Approximately 13,034 cubic yards of soil were removed from around the tetryl lines. Excavation was conducted only in the western part of Study Area 10. Explosives-contaminated soil was incinerated and the ash was landfilled. Lead-contaminated soil and ash were stabilized and landfilled.

Weston collected sediment samples on transects along the Red Water Ditch (Study Area 21) throughout the manufacturing area (Weston 1995b). The sediment samples were analyzed in the laboratory for seven explosives and lead. Portions of the Red Water Ditch with explosives concentrations exceeding 647 mg kg of 2,4,6-TNT were excavated until concentrations in the sediment reached 100 mg kg of 2,4,6-TNT. This sediment then was incinerated. Sediment samples were collected subsequent to excavation for confirmatory analysis of 2,4,6-TNT, lead, and tetryl to demonstrate that contaminated sediment had been removed.

2.3.2 Study Areas 2, 10, 16, 17, 19, and 22 (OU-6) Remedy Implementation

The remedy for Study Areas 2, 10, 16, 17, 19, and 22 within OU-6 was selected in an IROD dated October 20, 1996. The remedy components outlined above were implemented. Remedial actions commenced on or about November 4, 1996, based on field screening data records that were available for samples collected from the areas identified for excavation within OU-6 (QORE 2004). Remediation of explosives-contaminated material was completed on January 18, 1997. In addition, any ash or soil that failed the toxicity characteristic leaching procedure (TCLP) for lead was stabilized in a pug mill and placed in the onsite disposal area. Following completion of remedial actions, the onsite disposal area was referred to as the NHWL.

At Study Area 2, approximately 185 cubic yards of 2,4-DNT contaminated soils were excavated and transported to the TIS-20 for thermal treatment. Treated soils were landfilled at the onsite disposal area (i.e., the NHWL). Confirmatory samples were collected to demonstrate that the contamination had been removed (QORE 2004).

Although Study Area 10 was also included in the OU-6 IROD, additional analysis conducted in a WOE evaluation determined that NFA was needed in the eastern part of Study Area 10. Therefore, no remediation was conducted in the eastern portion of this study area even though it was initially included in the OU-6 IROD. Remedial actions had previously been conducted in the western portion of Study Area 10 as part of the OU-2 IROD.

Weston conducted a sampling program at Study Area 16 to quantify the extent of explosives and lead contamination that SAIC identified in 1996 (SAIC 1996a). Study Area 16 soil in the general areas of Burning Pits 2 and 3 was identified for remediation. All soil with explosives and lead above applicable criteria was excavated, transported, and incinerated. Incinerator ash with high lead concentrations was stockpiled for future solidification and stabilization. Soil in grid areas with lead contamination only was temporarily left in place. Subsequent to Weston's remediation, ECC conducted additional remediation for lead-contaminated soil at Study Area 16. All lead-contaminated soil with concentrations in excess of 300 mg kg was excavated and stabilized using an onsite pug mill. Confirmatory samples were collected from the excavation to confirm that contaminated soil had been removed. The remaining stockpiled incinerator ash with high lead concentrations also was stabilized (ECC 1998). A total of 1,500 cubic yards of lead-contaminated soil from Study Areas 16 and 19 were excavated and stabilized.

Weston conducted a sampling program at Study Area 17 in September 1996 to delineate the extent of contamination around hot spots identified during Phase I of the Supplemental RI (SAIC 1996a), and remediation was conducted. The excavation criterion for 2,4-DNT was 356 mg kg. Post-excavation data confirmed sampling results were below the excavation criterion. Total lead was detected at a maximum concentration of 25.6 mg kg, which was well below Weston's original lead excavation criterion of 500 mg kg (which pertained to OU-2) and Weston's revised lead excavation criterion of 400 mg kg (which was adopted for OU-6).

In 1996, Weston conducted a sampling program at Study Area 19 to quantify the extent of explosives and lead contamination. Sampling showed that 2,4-DNT concentrations were less than 1 mg kg; however, the maximum lead concentration detected was 566 mg kg (Weston 1996a, 1996e). Because the Study Area 19 soil was contaminated with lead only, it was not incinerated but, rather, was left in place for future remediation. Subsequent to Weston's investigation, ECC conducted remediation for lead-contaminated soil at Study Area 19. All lead-contaminated soil with concentrations in excess of 300 mg kg was excavated and stabilized using an onsite pug mill (ECC 1998). Excavation confirmatory samples were collected after completion of excavation activities to confirm that contaminated soil had been removed. A total of 1,500 cubic yards of lead-contaminated soil from Study Areas 16 and 19 were excavated and stabilized.

The existing surface of the Study Area 22 Landfill was cleared and graded prior to the installation of a 30-mil polyvinyl chloride (PVC) membrane liner. The liner was covered with a protective soil and grass layer that was sloped to drain. The boundaries of the completed landfill cover were surveyed and marked. Complete details of the Study Area 22 Landfill closure are contained in the Final Report for Area 22, Landfill Cap (ECC 1999). Since closure, the landfill has been fenced to prevent unauthorized access.

Weston submitted the Draft Project Closeout Reports for both OU-2 and OU-6 in July 1998.

2.3.3 OU-7 Remedy Implementation

Implementation of the remedy selected for Study Area 2 in the OU-7 ROD required excavation and offsite disposal of PAH-contaminated soil at an offsite landfill and implementation of LUCs (SAIC 2010). The selected active remedy for Study Area 2 was implemented in accordance with the Project Plans prepared by SpecPro Environmental Services LLC (SES) (SES 2009a) that included a site safety and health plan (SSHP), waste management plan, and quality control (QC) plan. SES excavated approximately 168 cubic yards of PAH-contaminated soil and disposed of the soil offsite to the Three Corners Landfill, a RCRA Subtitle D landfill, in Piedmont, Alabama. Sixteen confirmation samples were collected at least 1 foot below the existing grade at the excavated area to confirm that the contamination was removed. Backfill material was obtained from an onsite borrow pit approximately 1,100 feet north of the excavation area and placed into the excavated area. Further detail, including the excavated soil depth, volume, and confirmation sample locations and results, is provided in the *Project Report for Landfill*

Maintenance and PAH Contaminated Soil Removal at the Former Alabama Army Ammunition Plant (SES 2009b).

A LUC Implementation Plan (LUCIP) (Revision 01) has been prepared and implemented to meet the objectives of the LUC remedy described in the OU-7 ROD (Leidos 2018). In addition to the OU-7 ROD objectives, the LUCIP (Revision 01) identifies three additional instruments that contain restrictions on the ALAAP – Area B property. These instruments are the following: the Quitclaim Deed, which transferred ALAAP – Area B to the city of Childersburg; the subsequent Environmental Covenant developed by the LRA pursuant to the Alabama Uniform Environmental Covenants Act (AUECA) and the regulations promulgated thereunder; and Childersburg LRA Ordinance No. 1078. Annual inspections are performed at ALAAP – Area B as required by the LUCIP. The LUCs and additional restrictions placed on ALAAP – Area B that pertain to the subject of this FYR (i.e., OU-7 ROD study areas) are summarized in Table 2-4. The table summarizes the LUCs and restrictions according to each of the four instruments described above.

**Table 2-4. Summary Table of LUCs and Restrictions for OU-7 ROD Study Areas
Alabama Army Ammunition Plant, Childersburg, Alabama**

Media, Engineered Controls, and Areas that Do Not Support UU/UE Based on Current Conditions for OU-7 ROD Study Areas	LUCs or Restrictions Needed	LUCs or Restrictions Called for in the OU-7 ROD or Additional Instruments	Impacted Parcels	Objective of LUC or Restriction	Title of Instrument Implemented (and date)
Soil/Sediment – Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 22, 26, Building 6 – Coke Oven, South Georgia Road Dump	Yes	Yes	Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 22, 26, Building 6 – Coke Oven, South Georgia Road Dump	LUCs shall be implemented to prevent future residential use of the study areas. Residential purposes include residential housing, elementary and secondary schools, and child care facilities.	ALAAP – Area B OU-7 ROD
Tissue in fish found in surface water – Study Areas 21 and 26			Study Areas 21 and 26	Signs shall be posted to warn against consumption of fish tissue from Study Areas 21 and 26.	
Soil/Sediment – Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 26, Building 6 – Coke Oven, South Georgia Road Dump			Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 26, Building 6 – Coke Oven, South Georgia Road Dump	The effectiveness of LUCs shall be monitored through performance of annual inspections.	
Soil – Study Area 22			Study Area 22	LUCs shall be implemented to prevent excavation, digging, drilling, or other activities that may damage the landfill cap within Study Area 22 (Demolition Landfill).	
Soil – Study Area 22			Study Area 22	Effectiveness of the LUCs at Study Area 22 (Demolition Landfill) shall be monitored through annual inspections.	
Soil – Study Area 22			Study Area 22	Damage to the landfill cap at Study Area 22 (Demolition Landfill) shall be monitored through annual inspections. Maintenance of the cap shall be conducted.	
Soil/Sediment – All of Area B	Yes	Yes	All of Area B	The property is intended to be used as an industrial park with ancillary commercial, recreational, and natural habitat areas.	Quitclaim Deed (April 2003)
Soil/Sediment – All of Area B			All of Area B	The property shall be used solely for commercial and industrial purposes that include, but are not limited to, administrative/office space, manufacturing, warehousing, restaurants, hotels/motels, and retail activities.	

**Table 2-4. Summary Table of LUCs and Restrictions for OU-7 ROD Study Areas
Alabama Army Ammunition Plant, Childersburg, Alabama (Continued)**

Media, Engineered Controls, and Areas that Do Not Support UU/UE Based on Current Conditions for OU-7 ROD Study Areas	LUCs or Restrictions Needed	LUCs or Restrictions Called for in the OU-7 ROD or Additional Instruments	Impacted Parcels	Objective of LUC or Restriction	Title of Instrument Implemented (and date)
Soil/Sediment – All of Area B			All of Area B	The property shall not be used for residential purposes that include, but are not limited to, housing, day care facilities, schools (excluding education and training programs for persons over 18 years of age), and assisted living facilities.	
Groundwater – All of Area B			All of Area B	Access or use of groundwater underlying ALAAP – Area B is prohibited without the prior written approval of the Army, ADEM, and EPA.	
Soil/Sediment – All of Area B			All of Area B	Excavation, digging, drilling, or other disturbance of the soil is prohibited without an approved excavation plan that includes contingencies that define the actions to be taken if groundwater or contaminated soil is encountered. The excavation plan must be approved by the Army and EPA (in consultation with ADEM).	
Soil – NHWL			NHWL	Excavation, digging, drilling, or other activities that would damage the soil cover and liner of the NHWL are prohibited.	
NHWL			NHWL	Maintenance of the fence and signs is required at the NHWL.	
Soil – NWHL			NHWL	The owner shall promptly notify the Army of any breaches in the landfill soil cover.	
Soil – Asbestos Repository			Asbestos Repository	Excavation, digging, drilling, or other activities that would damage the cap on the Asbestos Repository are prohibited.	
Soil – Asbestos Repository			Asbestos Repository	The owner shall promptly notify the Army of any breaches in the cap of the Asbestos Repository.	

**Table 2-4. Summary Table of LUCs and Restrictions for OU-7 ROD Study Areas
Alabama Army Ammunition Plant, Childersburg, Alabama (Continued)**

Media, Engineered Controls, and Areas that Do Not Support UU/UE Based on Current Conditions for OU-7 ROD Study Areas	LUCs or Restrictions Needed	LUCs or Restrictions Called for in the OU-7 ROD or Additional Instruments	Impacted Parcels	Objective of LUC or Restriction	Title of Instrument Implemented (and date)
Soil – Study Area 22 – Demolition Landfill			Study Area 22 – Demolition Landfill	Excavation, digging, drilling, or other activities that would damage the cap on Study Area 22 (Demolition Landfill) are prohibited.	
Soil – Study Area 22 – Demolition Landfill			Study Area 22 – Demolition Landfill	The owner shall promptly notify the Army of any breaches in the cap on Study Area 22 (Demolition Landfill).	
Soil – South Georgia Road Dump			South Georgia Road Dump	Excavation, digging, drilling, or other activities that may interfere with the Army's remediation of the South Georgia Road Dump are prohibited until the time that the remediation activities are complete and the Remedial Action Report is approved by the regulatory agency.	
Soil/Sediment – All of Area B	Yes	Yes	All of Area B	Property is restricted to commercial and industrial purposes only. Commercial and industrial uses include, but are not limited to, administrative/office space, manufacturing, warehousing, restaurants, hotels/motels, and retail activities.	AUECA Environmental Covenant
Soil/Sediment – All of Area B			All of Area B	The property shall not be used for residential purposes that include, but are not limited to, housing, day care facilities, schools (excluding education and training programs for persons over 18 years of age), and assisted living facilities. Playgrounds associated with commercial or industrial uses will not be permitted.	
Groundwater – All of Area B			All of Area B	Access or use of groundwater underlying the property for any purpose is prohibited without the prior written approval of the city of Childersburg, the Army, ADEM, and EPA.	
Soil/Sediment – All of Area B			All of Area B	The owner shall send written notification to the city of Childersburg, ADEM, the Army, and EPA following transfer of a specified	

**Table 2-4. Summary Table of LUCs and Restrictions for OU-7 ROD Study Areas
Alabama Army Ammunition Plant, Childersburg, Alabama (Continued)**

Media, Engineered Controls, and Areas that Do Not Support UU/UE Based on Current Conditions for OU-7 ROD Study Areas	LUCs or Restrictions Needed	LUCs or Restrictions Called for in the OU-7 ROD or Additional Instruments	Impacted Parcels	Objective of LUC or Restriction	Title of Instrument Implemented (and date)
				interest in, or concerning proposed changes in use of, applications for building permits for, or proposals for any site work affecting the contamination on the Property.	
Soil/Sediment – All of Area B			All of Area B	On the anniversary of the date the AUECA Environmental Covenant was signed by the city of Childersburg, the owner shall submit an annual report to EPA and ADEM detailing the compliance, and any lack of compliance, with the terms of the Covenant.	
Soil/Sediment – All of Area B	Yes	Yes	All of Area B	A city ordinance is in place that prohibits the development of playgrounds associated with commercial or industrial use.	City of Childersburg Ordinance No. 1078

ADEM = Alabama Department of Environmental Management
 AUECA = Alabama Uniform Environmental Covenants Act
 ALAAP = Alabama Army Ammunition Plant
 EPA = U.S. Environmental Protection Agency
 LUC = Land Use Control
 NHLW = Non-Hazardous Waste Landfill
 OU = Operable Unit
 ROD = Record of Decision
 UU/UE = Unlimited Use/Unrestricted Exposure

3. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the Third FYR (Table 3-1) as well as the recommendations from the Third FYR and the current status of those recommendations (Table 3-2). As part of the regulatory review of the Third FYR, EPA and the Army were not in agreement regarding the Protectiveness Statements nor in the recommendations presented in the document. EPA prepared a letter, dated September 5, 2013, that included changes they requested to be made to the Protectiveness Statements and recommendations. This letter is included in Attachment A. The final version of the Third FYR contained the Protectiveness Statements and recommendations prepared by the Army. The September 5, 2013 letter from EPA to the Army contained the Protectiveness Statements and recommendations prepared by EPA. Because EPA and the Army did not resolve the Protectiveness Statements and recommendations from the Third FYR, both sets are provided below in Tables 3-1 and 3-2.

Additional correspondence between EPA and the Army on the Protectiveness Statements and recommendations included a response letter prepared by the Army, dated April 2, 2014, and a follow-up letter from EPA to the Army, dated May 20, 2014. The additional correspondence is included in Attachment A. ADEM's letter, dated June 17, 2013, stating approval of the Third FYR, is also included in Attachment A.

**Table 3-1. Protectiveness Determinations/Statements from the Third FYR
Alabama Army Ammunition Plant, Childersburg, Alabama**

OU#	Protectiveness Determination	Protectiveness Statement
<i>Army Determination/Statements Presented in the Final Third FYR</i>		
1	Protective	The remedy for OU-1 is protective of human health and the environment. Although an RAO was not specifically indicated in the OU-1 ROD, the OU-1 ROD was incorporated in the OU-7 ROD as a component of the Final Selected Remedy, and RAOs for OU-1 are included in the OU-7 ROD. The stated remedial action goal in the OU-1 ROD was the elimination of site risks by treating the COCs in accordance with ARARs and regulations to achieve overall protection of human health and the environment. The remedial action goal in the OU-1 ROD and the RAOs in the OU-7 ROD were met by implementation of the selected remedy. Stockpiled soil was incinerated to meet the treatment standards, and the incineration wastes were isolated in the NHL. ACMs were separated and properly disposed of offsite. Although institutional controls for the NHL were not specified in the decision documents, institutional controls for OU-1 are specified in the OU-7 ROD, and land use restrictions and a LUCIP were incorporated into the FOSET and into the Quitclaim Deed transferring the property to the city of Childersburg. In addition, pursuant to AUECA (Ala. Code Sections 35-19-1 to 35-19-14 [as amended]) and the regulations promulgated thereunder, the LRA developed an Environmental Covenant, which was recorded in the Talladega County Court on May 28, 2013. The Environmental Covenant restricts use of the property to commercial and industrial purposes and not for residential purposes without written approval of the Army, ADEM, and EPA. The Environmental Covenant is a layer of LUCs in addition to the selected remedy. Inspections of the site and interviews conducted for this FYR indicate that the LUCs in the deed are being enforced as intended and are effective.
2	Protective	The remedy for OU-2 is protective of human health and the environment. Although an RAO was not specifically indicated in the OU-2 IROD, the OU-2 IROD was incorporated in the OU-7 ROD as a component of the Final Selected Remedy, and RAOs for OU-2 are included in the OU-7 ROD. The RAO for OU-2 in the OU-2 IROD was to prevent human exposure to soil and sediment contaminated with explosives and metals. The RAO was met by implementation of the selected remedy. Soil, sediment, and sewer system components were excavated, incinerated, and stabilized (if required), and the incineration wastes were isolated in the NHL. Samples were collected from excavated areas, thus confirming that excavation standards specified in the OU-2 IROD and, subsequently, the RAOs in the OU-7 ROD, were met. Although changes in risk values and risk assessment methods have occurred since the

**Table 3-1. Protectiveness Determinations/Statements from the Third FYR
Alabama Army Ammunition Plant, Childersburg, Alabama (Continued)**

OU#	Protectiveness Determination	Protectiveness Statement
		<p>IROD, the mean concentrations of residual contamination are still protective of human health in the mandated industrial use for the site. Through the performance of a rigorous ERA, a WOE evaluation, and scientific risk management decision making, no ecoCOCs were determined to warrant consideration in evaluating additional remedial actions for the site. Additional field studies and observations performed for the site continue to show that the remedies are protective with regard to ecological risk. The site continues to maintain complete terrestrial and aquatic habitat with functioning food webs and food chains. However, recent land clearing to advance the site as an industrial park renders these ecological assessments less meaningful. Although institutional controls for the study areas within OU-2 and the NHL were not specified in the decision documents, institutional controls for OU-2 are specified in the OU-7 ROD, and land use restrictions and a LUCIP were incorporated into the FOSET and into the Quitclaim Deed transferring the property to the city of Childersburg. LUCs for the OU-2 study areas were also included in the ROD for OU-7 and will be implemented through a new LUCIP. In addition, pursuant to AUECA (Ala. Code Sections 35-19-1 to 35-19-14 [as amended]) and the regulations promulgated thereunder, the LRA developed an Environmental Covenant, which was recorded in the Talladega County Court on May 28, 2013. The Environmental Covenant restricts use of the property to commercial and industrial purposes and not for residential purposes without written approval of the Army, ADEM, and EPA. The Environmental Covenant is a layer of LUCs in addition to the selected remedy. Inspections of the site and interviews conducted for this FYR indicate that the LUCs in the deed are being enforced as intended and are effective.</p>
6	Protective	<p>The remedy for OU-6 is protective of human health and the environment. Although not stated in the OU-6 IROD, the OU-6 IROD was incorporated in the OU-7 ROD as a component of the Final Selected Remedy, and RAOs for OU-2 are included in the OU-7 ROD. The RAO for OU-6 in the OU-6 IROD was to prevent human exposure to soil and sediment contaminated with explosives and metals. The RAO was met by implementation of the selected remedy. Soil was excavated, incinerated, and stabilized (if required), and the incineration wastes were isolated in the NHL. Samples were collected from excavated areas, thus confirming that excavation standards in the OU-6 IROD and, subsequently, the RAOs in the OU-7 ROD, were met. The landfill at Study Area 22 was covered with an engineered cap. Although changes in risk values and risk assessment methods have occurred since the IROD, the mean concentrations of residual contamination are still protective of human health in the mandated industrial use for the site. Through the performance of a rigorous ERA, a WOE evaluation, and scientific risk management decision making, no ecoCOCs were determined to warrant consideration in evaluating additional remedial actions for the site. Additional field studies and observations performed for the site continue to show that the remedies are protective with regard to ecological risk. The site continues to maintain complete terrestrial and aquatic habitat with functioning food webs and food chains. However, recent land clearing to advance the site as an industrial park renders these ecological assessments less meaningful. Although institutional controls for the study areas within OU-6 and the NHL were not specified in the decision documents, institutional controls for OU-6 are specified in the OU-7 ROD, and land use restrictions and a LUCIP were incorporated into the FOSET and into the Quitclaim Deed transferring the property to the city of Childersburg. LUCs for the OU-6 study areas were also included in the ROD for OU-7 and will be implemented through a new LUCIP. In addition, pursuant to AUECA (Ala. Code Sections 35-19-1 to 35-19-14 [as amended]) and the regulations promulgated thereunder, the LRA developed an Environmental Covenant, which was recorded in the Talladega County Court on May 28, 2013. The Environmental Covenant restricts use of the property to commercial and industrial purposes and not for residential purposes without written approval of the Army, ADEM, and EPA. The Environmental Covenant is a layer of LUCs in addition to the selected remedy. Inspections of the site and interviews conducted for this FYR indicate that the LUCs in the deed are being enforced as intended and are effective.</p>

**Table 3-1. Protectiveness Determinations/Statements from the Third FYR
Alabama Army Ammunition Plant, Childersburg, Alabama (Continued)**

OU#	Protectiveness Determination	Protectiveness Statement
		<i>EPA Determination/Statements Presented in a Letter from EPA to the Army Dated September 5, 2013</i>
1	Short-term Protective	The remedy at OU-1 currently protects human health and the environment in the short term because exposure pathways that could result in unacceptable risks are being controlled. All soils have been disposed of in the NHWL (the selected onsite disposal area), which is capped, fenced, and observed to be maintained, and institutional controls are implemented as called for in a LUCIP, FOSET, and Quitclaim Deed transferring the site to the city of Childersburg. However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure protectiveness: revise the decision document to appropriately select the NHWL as the final disposal location, add requirements for monitoring to determine whether the material is leaching from the landfill, and select institutional controls as part of the remedy for the NHWL.
2	Short-term Protective	The remedy at OU-2 currently protects human health and the environment in the short term because exposure pathways that could result in unacceptable risks are being controlled. All soils, sediment, and sewer system components were excavated, incinerated, and stabilized (if necessary), and the incineration wastes isolated in the NHWL. The NHWL is capped, fenced, and observed to be maintained, and institutional controls are implemented as called for in a LUCIP, FOSET, and Quitclaim Deed transferring the site to the city of Childersburg. However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure protectiveness: revise the decision document to appropriately select the NHWL as the final disposal location, add requirements for monitoring to determine whether the material is leaching from the landfill, and select institutional controls as part of the remedy for the NHWL.
6	Short-term Protective	The remedy at OU-6 currently protects human health and the environment in the short term because exposure pathways that could result in unacceptable risks are being controlled. All soils, sediment, and sewer system components were excavated, incinerated, and stabilized (if necessary), and the incineration wastes isolated in the NHWL. The NHWL is capped, fenced, and observed to be maintained, and institutional controls are implemented as called for in a LUCIP, FOSET, and Quitclaim Deed transferring the site to the city of Childersburg. However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure protectiveness: revise the decision document to appropriately select the NHWL as the final disposal location, add requirements for monitoring to determine whether the material is leaching from the landfill, and select institutional controls as part of the remedy for the NHWL.

ACM = Asbestos-Containing Material
ADEM = Alabama Department of Environmental Management
ARAR = Applicable or Relevant and Appropriate Requirement
AUECA = Alabama Uniform Environmental Covenants Act
COC = Chemical of Concern
ecoCOC = Ecological Chemical of Concern
EPA = U.S. Environmental Protection Agency
ERA = Ecological Risk Assessment
FOSET = Finding of Suitability for Early Transfer
FYR = Five-Year Review

IROD = Interim Record of Decision
LRA = Local Redevelopment Authority
LUC = Land Use Control
LUCIP = Land Use Control Implementation Plan
NHWL = Non-Hazardous Waste Landfill
OU = Operable Unit
RAO = Remedial Action Objective
ROD = Record of Decision
WOE = Weight-of-Evidence

**Table 3-2. Status of Recommendations from the Third FYR
Alabama Army Ammunition Plant, Childersburg, Alabama**

OU#	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date
<i>Army Recommendations Presented in the Final Third FYR</i>					
2, 6	Institutional controls are in place for OU-2, OU-6, and at the NHWL and functioning as intended but are not called for in the decision documents	Reach a decision between the Army and EPA on how to document the LUCs in place for the NHWL	Completed	LUCs were incorporated as a remedy component of the OU-7 ROD, which includes the OU-2 and OU-6 study areas. LUCs were called for in the Quitclaim Deed and were incorporated in the LUCIP.	OU-7 ROD – March 2012 LUCIP – November 2013 LUCIP (Revision 01) – June 2018
2, 6	Although maintenance and inspection requirements for the NHWL are present within the LUCIP (contained within the FOSET), no formal maintenance plan exists	Instruct the city of Childersburg to develop a formal maintenance plan for the NHWL	Completed	A maintenance plan was prepared by the Army for the city to use for the NHWL.	NHWL Maintenance Plan – April 2015
<i>EPA Recommendations Presented in a Letter from EPA to the Army Dated September 5, 2013</i>					
1, 2, 6, and NHWL	NHWL does not include monitoring	Establish a periodic monitoring program to determine whether contaminants are leaching from landfill	Under Discussion	Unresolved; even though the decision at the time of remedy selection was to not include monitoring wells at the onsite disposal area (i.e., the NHWL), the Army has offered to install wells as part of an ESD to the ROD for OU-7. EPA initiated a dispute regarding the need to perform monitoring at the NHWL. This dispute has not yet been resolved.	N/A
1, 2, 6, NHWL, and Asbestos Landfills	Institutional controls have been put in place but are not called for in decision documents	Appropriately document the need for institutional controls in a decision document	Completed	LUCs were called for in the Quitclaim Deed and were incorporated in the LUCIP.	LUCIP – November 2013 LUCIP (Revision 01) – June 2018
2, 6, NHWL, and Asbestos Landfills	Maintenance requirements presented in transfer agreements have not been developed in a maintenance planning document for use by the city of Childersburg in ensuring requirements are met	Develop a formal maintenance plan with the city of Childersburg	Completed	Maintenance Plans were prepared by the Army for the city of Childersburg to use for the NHWL and the Asbestos Repository.	NHWL Maintenance Plan – April 2015 Asbestos Repository Maintenance Plan – April 2015

**Table 3-2. Status of Recommendations from the Third FYR
Alabama Army Ammunition Plant, Childersburg, Alabama (Continued)**

OU#	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date
1, 2, 6, NHWL, and Asbestos Landfills	The NHWL and the Asbestos Landfills were not appropriately selected in the remedy decision documents for OU- 1, OU-2, and OU-6	Revised (sic) the decision documents	Considered and not implemented	Considered and not implemented; upon further review of the IRODs, the Army believes these remedies were clearly selected and there is no need to revise documents from 20 years ago. EPA initiated a dispute regarding the need to perform monitoring at the NHWL. This dispute has not yet been resolved.	N/A

EPA = U.S. Environmental Protection Agency
ESD = Explanation of Significant Differences
FOSET = Finding of Suitability for Early Transfer
FYR = Five-Year Review
IROD = Interim Record of Decision
LUC = Land Use Control

LUCIP = Land Use Control Implementation Plan
N/A = Not Applicable
NHWL = Non-Hazardous Waste Landfill
OU = Operable Unit
ROD = Record of Decision

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4. FIVE-YEAR REVIEW PROCESS

4.1 COMMUNITY NOTIFICATION, INVOLVEMENT, AND SITE INTERVIEWS

On July 26 and August 2, 2017, a public notice was published in the *Daily Home* (Talladega, Alabama) announcing the commencement of the FYR process for the ALAAP site, providing contact information for USACE, and inviting community participation. The public notice is available in Attachment B.

This Fourth FYR Report will be made available to the public once it has been finalized. Copies of this document will be placed in the designated public repository: Earle A. Rainwater Memorial Library, 124 Ninth Avenue SW, Childersburg, Alabama, 35044. Upon completion of this Fourth FYR, a public notice will be placed in the *Daily Home* (Talladega, Alabama) to announce the availability of the final Fourth FYR Report in the site document repository.

One Talladega County resident responded to the published public notice by telephone. The respondent stated that historical information would be found at the Childersburg library. The respondent also inquired as to how the cancer rate around ALAAP compares to the cancer rate in other parts of the country. He stated that citizens are concerned about ALAAP because they need jobs and work in the area. The respondent was asked if he wants the industrial park to succeed, and he said yes. The respondent mentioned that soil had been burned on ALAAP and that the public may not have been aware that the site was cleaned up, how it was cleaned up, and when and how effectively. The respondent asked if the property can be used for industry, but stated that “the signs say it is contaminated so it can’t be used.” He asked if some parts could be used.

The Army prepared a response to the Talladega County resident and sent the response to him. The comment and response are provided in Attachment C.

A group of city of Childersburg and Talladega County community leaders submitted a letter to the Army, in response to the public notice invitation for comments. The letter is provided in Attachment C. The community leaders, who are representing the commercial interests of the city of Childersburg, have significant concerns and strenuously object to the warning signs placed across the ALAAP – Area B property. They are concerned about the number of signs and that the signs are driving away potential commercial interests in the property. The community leaders expressed that multiple controls are in place to ensure the land use restrictions are adhered to and that the signs are repetitious and not necessary to enforce the LUCs. The community has requested, from the Army and EPA, that the signs be removed and that the ALAAP – Area B property be cleaned up so that commercial and industrial development can be realized.

The Army prepared a response to the community leaders and sent the response to them. The comment and response are provided in Attachment C.

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy that has been implemented to date. The results of these interviews are summarized below.

The city of Childersburg Clerk, the Mayor, and the Talladega County Economic Development Authority Executive Director were interviewed and afforded an opportunity to respond to the questions posed on the interview record contained in Attachment D. In general, the responses from each of these interviewees focused on the negative impact the LUC warning signs at the study areas requiring LUCs were having on prospective entities interested in purchasing ALAAP – Area B property. Each suggested that the signs were a significant contributor in an inability to market the ALAAP property.

The USACE Project Manager for ALAAP was interviewed and provided the responses contained in Attachment D. In general, the responses indicated that the LUCs are working as intended because land owners had contacted USACE to inquire about requirements for conducting excavations and for completing excavation plans. This demonstrates that land owners are aware of use restrictions on their properties. Several other examples of how requirements of the LUCIP have been followed are also provided in the interview form.

The ADEM Project Manager for ALAAP was interviewed and gave the responses provided in Attachment D. In general, the responses indicate that required site documentation has been submitted in a timely manner, institutional controls seem to be in order, and the LUCs are maintained.

4.2 LAND OWNER INTERVIEWS

Land owners who have purchased property from the city of Childersburg since the property was transferred from the Army to the city were not reachable by telephone or email. Therefore, letters were mailed to each of the five property owners along with an interview form for completion. The business entities and property owners included NuSteel Fabricators (owner – Seven C’s LLC), Blair Block (owner – Blair Block LLC), Koldsteel (Owner – Koldsteel Inc.), DCI South Properties (owner – DCI South Properties LLC), and Nippon Oil Lubricants America (owner – Nippon Oil Lubricants LLC).

A response was received from Mr. Matt Blair, owner and Vice President of Blair Block. Mr. Blair said that his overall impression of ALAAP was that it was well-organized, friendly, and helpful. He said that the “Notice” signs have not been very well-received and that people start rumors about what used to be at ALAAP. He answered that he is aware of the use restrictions on the property and that the Army has been to his property many times and has been extremely helpful and knowledgeable. He did not have any plans to purchase additional ALAAP property, nor to sell or lease any of his property to another entity. He said that Blair Block still plans to put up a building across from his existing operation, but the permits have not yet been approved. He was not aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities. His suggestion regarding the site’s management or operation was that perhaps a website could be used where the property owners could be informed of when testing is going to occur at the property. He also suggested that the results of testing could be published. He acknowledged that perhaps the results of testing are being made public and he is not aware of it. He also suggested that the site could provide a list of things to do and not do or frequently asked questions about the ALAAP property.

A response was received from Ms. Sonya Reynolds, CPO and Plant Manager at Nippon Oil Lubricants. Ms. Reynolds said that her overall impression of ALAAP was good. She responded that the site did not have any effects on the Nippon property or the surrounding community. She answered that she is aware of the use restrictions on the property. She said that Nippon Oil Lubricants may have plans to purchase additional ALAAP property, or sell or lease property to another entity, although she was not specific about which situation would apply to Nippon Oil Lubricants. Nippon Oil Lubricants does not have any plans to drill wells on the property, but they may expand in the future. Ms. Reynolds indicated that she was not aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities. She did not have any comments, suggestions, or recommendations regarding management or operation of the site.

The letter from the Army and the completed interview forms received from Blair Block and Nippon Oil Lubricants are provided in Attachment D.

4.3 DATA REVIEW

There are no data to review. At this time, there is not a groundwater remedy for ALAAP – Area B (OU-4).

4.4 SITE INSPECTION

The site inspection for this FYR was conducted on Wednesday, May 24, 2017. In attendance were Mike Klidzejs (Leidos), Rupa Price (Leidos), and Mike Cox (Cox Environmental & HydroGeologic). Representatives from EPA, ADEM, USACE, and the Army were informed of the inspection date 2 weeks prior to the inspection and offered an opportunity to participate. The purpose of the inspection was to assess the protectiveness of the remedy. The Study Area 22 landfill was assessed during the inspection. Study Areas 2, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 26, Building 6 – Coke Oven, and the South Georgia Road Dump also were observed. However, vegetation has almost completely reclaimed these areas from prior clearcutting. The Study Area 22 landfill inspection was performed to check the integrity of the cover and to ensure that the fences and gate provided security. The study areas were observed to determine if LUC warning signs were still present along roads and to detect any violation of LUCs (e.g., signs of excavation, trespassing, unauthorized use).

The completed site inspection checklist and photographs from the site inspection are provided in Attachment E. During the inspections of the Study Area 22 landfill, it was noted that a small section of fence was slightly damaged. However, this does not threaten the integrity of the cover or the security to the landfill. No evidence of significant erosion, slumping, rilling, or other conditions that would question the integrity of the cap was observed. Fencing and gates around the landfill were intact and locked.

Annual inspections of ALAAP – Area B are also performed as required in the LUCIP. The results of the 2016 and 2017 LUC inspections are presented in the Land Use Control Inspection Report – 2016 (Leidos 2016) and the Land Use Control Inspection Report – 2017 (Leidos 2017a). During the reviews, a records review, interviews with regulatory agency and Army representatives, and a site inspection of relevant study areas within ALAAP – Area B showed that the site was generally in compliance with LUC requirements, with only one minor issue: LUC sign 21-4 could not be located.

5. TECHNICAL ASSESSMENT

5.1 QUESTION A: IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENTS?

5.1.1 Question A Summary

Yes, the remedies are functioning as intended by the decision documents. Remedies for the site included active remediation, capping of a landfill, and LUCs. Remedies requiring active remediation (e.g., excavation) were completed as planned for in the decision documents (OU-2 and OU-6 IRODs and OU-7 ROD). Sampling was conducted and confirmed that remedial goals were met. Excavated soil and other materials were appropriately treated and disposed of. Landfilled materials in Study Area 22 have been appropriately capped, eliminating a route of exposure. Some study areas were remediated only to allow for continued industrial use, and thus, UU UE is not appropriate for these areas. Because of this, the OU-7 ROD also selected LUCs as a remedy component. A LUCIP was prepared to document the LUCs (Leidos 2013), and Revision 01 to the LUCIP (Leidos 2018) has recently been prepared to clarify the LUC inspection requirements. The LUCIP incorporated institutional controls that were previously placed on the property as components of the environmental provisions of the Quitclaim Deed that transferred ALAAP – Area B from the Army to the city of Childersburg, a subsequent Alabama Uniform Environmental Covenant, and a city of Childersburg ordinance. Inspections of the LUCs and additional restrictions are performed annually.

5.1.2 Remedial Action Performance

The remedy for Study Areas 2, 7, 10, and 21, as selected in the IROD for OU-2, is functioning as intended. The soil and sediment excavated from Study Areas 2, 7, 10, and 21 were incinerated. Ash that passed TCLP analysis was placed in the NHL. The NHL was referred to in the historical documents as the onsite disposal area or backfill area and was selected as a component of the final remedies of the OU-2 and OU-6 IRODs. Any ash or soil that failed TCLP analysis was stabilized and then placed in the NHL after passing TCLP analysis. Excavated clay pipes from the study areas were handled in an identical manner. The contaminated media have been made nonhazardous, as verified through TCLP testing, and further isolated by placement in the landfill to eliminate threats to human health or the environment.

The remedy for Study Areas 2, 10, 16, 17, and 19, as selected in the IROD for OU-6, is functioning as intended. The soil excavated from Study Areas 2, 10, 16, 17, and 19 was incinerated. Ash that passed TCLP analysis was placed in the NHL. Any ash or soil that failed TCLP analysis was stabilized and then placed in the NHL after passing TCLP analysis. The contaminated media have been made nonhazardous, as verified through TCLP testing, and further isolated by placement in the landfill to eliminate threats to human health or the environment.

The remedy for Study Area 22, the Demolition Debris Landfill (OU-6), as selected in the IROD for OU-6, is functioning as intended. The landfill has been capped with a PVC geomembrane liner and a protective clay cap. The contamination source has been isolated from the environment and no longer presents a threat to human health and the environment. In addition, the landfill is encircled by fencing equipped with a locked gate, thus prohibiting unauthorized access. Inspection of the site revealed the landfill cap has been well maintained. An adequate vegetative cover exists. Mowing has precluded advancement of roots to the depth of the membrane. No evidence exists of any type of breach of the cap by erosion or slumping.

The remedy for Study Area 2, selected in the OU-7 ROD, is functioning as intended. Approximately 168 cubic yards of PAH-contaminated soil were excavated and disposed of offsite to the Three Corners Landfill, a RCRA Subtitle D landfill, in Piedmont, Alabama. Sixteen confirmation samples

were collected at least 1 foot below the existing grade at the excavated area to confirm that the contamination was removed. Backfill material was obtained from an onsite borrow pit and placed into the excavated area.

The LUC remedy selected for the OU-7 study areas (Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 22, 26, Building 6 – Coke Oven, and the South Georgia Road Dump) is functioning as intended, as described in Section 5.1.4.

5.1.3 System Operations/Operation and Maintenance

The Study Area 22 Landfill is the only landfill that is part of a remedy and requires inspection as part of the FYR process. The city of Childersburg is responsible for maintenance of the property and the landfill. Periodic inspections of the landfill ensure that maintenance is performed as required. The level of effort required to maintain the landfill is primarily a function of weather, which cannot be predicted in the long term. During the inspection of the landfill conducted for this FYR, some minor issues were noted; however, none of the observations threaten the integrity of the covers or the security to the landfill.

5.1.4 Implementation of Institutional Control and Other Measures

The Office of Solid Waste and Emergency Response Directive 9355.7-18, entitled “Recommended Evaluation of Institutional Controls: Supplement to the Comprehensive Five-Year Review Guidance,” provides recommendations for conducting FYRs for the institutional control component of the remedy. In general, the guidance requires that the institutional controls be reviewed to determine if they are being implemented and control risks as intended.

Institutional controls were selected in the OU-7 ROD. These institutional controls were selected based on restrictions and requirements placed on the ALAAP – Area B property. Additional restrictions on the property are outlined in the Quitclaim Deed, which transferred ALAAP – Area B to the city of Childersburg. Likewise, the Environmental Covenant also outlines restrictions placed on the ALAAP – Area B property and a city of Childersburg LRA Ordinance contains a restriction that pertains to the study areas included in the OU-7 ROD. A LUCIP (Leidos 2013) and Revision 01 (Leidos 2018) have been prepared to document the controls required for study areas included in the OU-7 ROD. The mechanisms for the implementation, monitoring, and enforcement of LUCs are described in the LUCIP. The land use assumptions made as part of the remedy decision continue to remain accurate. The physical areas that require LUCs and additional restrictions are identified and clearly shown in the LUCIP. In addition, the ROD that details the selection of LUCs and the LUCIP are readily available to the public and to property owners.

Inspections have been conducted and are provided in this document. The results of these inspections and the results of interviews and site inspections (conducted for this FYR) indicate that LUCs are in place and generally effective.

However, it is noted that there have been concerns expressed by the community leaders in the city of Childersburg and Talladega County that the LUC signs are driving potential commercial and industrial businesses from the area. They believe the warning signs have had the unintended consequence of prohibiting industrial reuse of the property by intimidating potential buyers of the property. The community leaders have requested that the Army and EPA remove the LUC signs to help lessen perceived anxiety and allow greater interest in use of the property for commerce and industry.

5.2 QUESTION B: ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS, AND RAOS USED AT THE TIME OF REMEDY SELECTION STILL VALID?

5.2.1 Question B Summary

In evaluating human health risk, it is found that most of the remaining site COC exposure point concentrations (EPCs) meet the current industrial Regional Screening Levels (RSLs), and therefore, are protective of human health. The two exceptions where the remaining site COC EPCs in the soils exceed the current RSLs include: 1) arsenic in soils at Study Areas 3, 8, 17, 18, 19, and Building 6 – Coke Oven; and 2) 2,4-DNT in subsurface soil at Study Area 2. Arsenic occurs naturally in soil and the exceedances are modest, with concentrations exceeding the RSL up to two times and exceeding the background comparison values up to three times (SAIC 2001). It is believed that the arsenic concentrations in soil are more indicative of natural variability rather than site-related contamination.

A remedial action was conducted at Study Area 2 as part of the OU-6 IROD. An area of soil containing 2,4-DNT was excavated to meet the criteria of 356 mg/kg. A maximum concentration of 2,4-DNT (99.3 mg/kg) was detected in the subsurface soil at a location northeast of the excavated area. This concentration exceeds the current industrial RSL for 2,4-DNT (34 mg/kg) by approximately three times. However, 2,4-DNT was detected only once in six subsurface soil samples and once in seven surface soil samples (at a maximum concentration of 0.48 mg/kg) (SAIC 2001). This single elevated concentration detected in the subsurface soil is unlikely to represent a realistic EPC (i.e., the concentration used to calculate risk) because receptors typically average exposure across an area rather than remaining in one location, and because exposure to this subsurface soil location would likely involve mixing with the surface soil, both of which would serve to reduce risk. For these reasons, it is believed that this one concentration of 2,4-DNT exceeding the current industrial RSL would not result in unacceptable risk.

In evaluating ecological risk, it is found that there are no concerns related to ecological receptors. Through the completion of a screening-level ecological risk assessment (SERA) and BERA, a WOE evaluation, and scientific risk management decision making, no ecoCOCs were determined to warrant consideration in evaluating additional remedial actions for the site. Additional field studies in 2013 and observations from that time until the present have been performed for the site and continue to show that the remedies are protective with regard to ecological risk. The site continues to maintain terrestrial and aquatic habitats with functioning food webs and food chains, but changes to advance the site as an industrial park render these ecological conditions less meaningful. In short, the site is not being managed for ecological purposes, but rather for industrial use and economic development. The same risk assessment including WOE methods remains currently applicable and no changes to the outcome would be expected.

5.2.2 Human Health Risk

This section addresses the information related to human health risk for Question B.

5.2.2.1 Changes in Toxicity and Other Contaminant Characteristics

To evaluate changes to toxicity data, a comparison of the toxicity values used in the RI to current toxicity values (EPA 2017a) is presented in Table 5-1. Bolded values indicate changes, which are described below:

- Changes or addition of inhalation toxicity values (i.e., inhalation unit risks [IURs] and reference concentrations [RfCs]) were noted for arsenic (gained an RfC), nickel (gained both an IUR and an RfC), 2,4-DNT (gained an IUR), and benzo(a)pyrene (change to the IUR and gained an RfC). However, inhalation is a minor exposure route for these chemicals (i.e., the risks are dominated by the ingestion and dermal contact pathways) such that the addition or change to the inhalation toxicity values would have little effect on the overall risks.

Table 5-1. Comparison of Historical and Current Toxicity Values for Human Health COCs
ALAAP Operable Unit 7 Five-Year Review
Alabama Army Ammunition Plant, Childersburg, Alabama

Residential and Industrial COCs ^a	Study Areas	Cancer Effects				Noncancer Effects			
		Oral CSF		Inhalation IUR		Oral RfD		Inhalation RfC	
		OU-7 CSF (mg/kg-day) ⁻¹	Current CSF ^b (mg/kg-day) ⁻¹	OU-7 IUR (µg/m ³) ⁻¹	Current IUR ^b (µg/m ³) ⁻¹	OU-7 RfD (mg/kg-day)	Current RfD ^b (mg/kg-day)	OU-7 RfC (mg/m ³)	Current RfC ^b (mg/m ³)
Antimony	8	-	-	-	-	4.00E-04	4.00E-04	-	-
Arsenic	2, 3, 8, 16, 17, 18, 19, B6	1.5	1.5	4.30E-03	4.30E-03	3.00E-04	3.00E-04	-	1.50E-05
Lead ^c	OU-2, OU-6, 4, 8, 10W, 16, SGRD	-	-	-	-	-	-	-	-
Nickel	8	-	-	-	2.60E-04	2.00E-02	2.00E-02	-	9.00E-05
1,3-Dinitrobenzene	OU-2, OU-6					1.00E-04	1.00E-04		
2,4-Dinitrotoluene	2, OU-6	0.68 ^d	0.68 ^d / 0.31	-	8.90E-05	2.00E-03	2.00E-03	-	-
2,6-Dinitrotoluene	OU-6	0.68 ^d	0.68 ^d / 1.5	-	-	1.00E-03	3.00E-04		
Tetryl	OU-2, OU-6					1.00E-02	2.00E-03		
1,3,5-Trinitrobenzene	OU-6					3.00E-02	3.00E-02		
2,4,6-Trinitrotoluene	7, 16, OU-2, OU-6	3.00E-02	3.00E-02	-	-	5.00E-04	5.00E-04	-	-
Benzo(a)anthracene	2, 8, 16	e	e	e	e	3.00E-02	e	-	e
Benzo(a)pyrene	2, 8, 16	7.30E+00	1.00E+00	8.86E-4 ^f	6.00E-04	3.00E-02	3.00E-04	-	2.00E-06
Benzo(b)fluoranthene	2, 8, 16	e	e	e	e	3.00E-02	e	-	e
Benzo(k)fluoranthene	2	e	e	e	e	3.00E-02	e	-	e
Dibenzo(a,h)anthracene	2, 8, 16	e	e	e	e	3.00E-02	e	-	e
Indeno(1,2,3-cd)pyrene	2, 8, 16	e	e	e	e	3.00E-02	e	-	e

Bolded values indicate a change from those used to support the OU- 7 ROD.

ALAAP = Alabama Army Ammunition Plant

COC = Chemical of Concern

CSF = Cancer Slope Factor

DNT = Dinitrotoluene

EPA = U.S. Environmental Protection Agency

IROD = Interim Record of Decision

IUR = Inhalation Unit Risk

OU = Operable Unit

RfC = Reference Concentration

RfD = Reference Dose

ROD = Record of Decision

^a The source for the chemicals of concern is the 2012 ALAAP Area B ROD (Table 2-19) and the OU-2 and OU-6 IRODs; residential COCs are included to ensure that changes to toxicity do not cause residential COCs to become industrial COCs.

^b The source for the current toxicity values is the EPA RSL tables (June 2017) (EPA 2017a).

^c Models were used to assess risk from exposure to lead.

^d The CSF for the mixture of 2,4-DNT and 2,6-DNT is used.

^e Concentrations are converted to benzo(a)pyrene equivalents and the toxicity values for benzo(a)pyrene are applied.

^f The IUR was converted from the inhalation CSF of 3.1 (mg/kg-day)⁻¹.

- For benzo(a)pyrene, the cancer slope factor (CSF) decreased from $7.3 \text{ (mg kg-day)}^{-1}$ to $1 \text{ (mg kg-day)}^{-1}$, which would result in lowering the cancer risks associated with benzo(a)pyrene and other carcinogenic PAHs (cPAHs) (because cancer risks for other cPAHs are calculated using the benzo[a]pyrene cancer toxicity values). The noncancer oral reference dose (RfD) for benzo(a)pyrene decreased, which would result in an increase to the noncancer HI.
- For 2,4-DNT and 2,6-DNT, although the combined CSF of $0.68 \text{ (mg kg-day)}^{-1}$ remained the same, individual CSFs have been developed for each chemical. For 2,4-DNT, the individual CSF is $0.31 \text{ (mg kg-day)}^{-1}$, which would result in decreasing the cancer risks relative to the use of the combined CSF. For 2,6-DNT, the individual CSF is $1.5 \text{ (mg kg-day)}^{-1}$, which would result in increasing the cancer risks relative to the use of the combined CSF. In addition, the 2,6-DNT RfD decreased from $1 \cdot 10^{-3}$ to $3 \cdot 10^{-4} \text{ mg kg-day}$, which would result in increasing the noncancer HI. However, it should be noted that the current 2,6-DNT toxicity values are Tier 3 provisional toxicity values and thus are associated with a lower level of confidence and certainty than Tier 1 or Tier 2 toxicity values.
- For tetryl, the RfD decreased from $1 \cdot 10^{-2}$ to $2 \cdot 10^{-3} \text{ mg kg-day}$, which would result in increasing the noncancer HI. As with the newer 2,6-DNT toxicity values, the revised RfD for tetryl is a Tier 3 provisional toxicity value associated with lower confidence and certainty.

5.2.2.2 Changes in Risk Assessment Methods and Exposure Assumptions

Changes to HHRA methods have occurred since the OU-2 and OU-6 IRODs and OU-7 ROD were signed. For example, relative bioavailability is currently taken into account when calculating arsenic risks from soil ingestion. In addition, there have been changes to exposure assumptions used in the HHRA. For example, the body weight for the industrial worker has increased while the body surface area exposed to soil has decreased. The potential effect of these changes is discussed in Section 5.2.2.4.

5.2.2.3 Changes in Land Use and Exposure Pathways

As required by the environmental provisions of the Quitclaim Deed, the current and future land use for the site has remained and will continue to be industrial. Currently, ALAAP – Area B is either occupied by industrial tenants or remains unused. In addition, no change to the zoning of Area B has occurred. Human health and ecological receptors and routes of exposure (e.g., ingestion, dermal contact) have not changed since the time of the OU-2 and OU-6 IRODs and OU-7 ROD. The site conceptual model, as it relates to soil contamination and its transport, has not changed since the remedy was completed. As a result, no actual or potential changes to exposure pathways have occurred.

5.2.2.4 Changes in Cleanup Goals

The effects of changes to toxicity values, risk assessment methods, and exposure assumptions can be assessed by comparing the cleanup goals used to conduct the remedial actions to current risk-based concentrations that are protective of human health. The latter are EPA RSLs for industrial land use (adjusted to reflect a target cancer risk of $1 \cdot 10^{-5}$ and a target HQ of 1) (EPA 2017a). Because industrial land use is the planned future land use at the OUs and is the basis for the ROD health-based cleanup goals, the industrial RSLs were used for comparison. They incorporate up-to-date toxicity values, exposure assumptions, and risk assessment methods. This comparison is presented in Table 5-2. As shown in the table, current industrial RSLs for 2,4-DNT, 2,6-DNT, and tetryl are lower than the cleanup goals used to conduct the remediation.

Table 5-2. Comparison of Industrial Cleanup Goals to Current Industrial RSLs^a
ALAAP Operable Unit 7 Five-Year Review
Alabama Army Ammunition Plant, Childersburg, Alabama

Industrial COCs ^b	Study Areas	Industrial Cleanup Goal OU-2 (mg/kg)	Industrial Cleanup Goal OU-6 (mg/kg)	Industrial Cleanup Goal OU-7 (mg/kg)	Current Industrial RSL		
					Cancer TCR = 1E-5 (mg/kg)	Noncancer THQ = 1 (mg/kg)	Selected RSL ^c (mg/kg)
Lead	OU-2, OU-6	500	400	-	-	800	800
1,3-Dinitrobenzene	OU-2, OU-6	1	1	-	-	82	82
2,4-Dinitrotoluene	OU-6	-	356	-	34*	1,600	34*
2,6-Dinitrotoluene	OU-6	-	356	-	15	250	15
Tetryl	OU-2, OU-6	5000	5000	-	-	2,300	2,300
1,3,5-Trinitrobenzene	OU-6	-	36.7	-	-	32,000	32,000
2,4,6-Trinitrotoluene	OU-2, OU-6	647	348	-	960	510	510
Benzo(a)anthracene	2	-	-	55	210	-	210
Benzo(a)pyrene	2	-	-	5.5	21	220	21
Benzo(b)fluoranthene	2	-	-	55	210	-	210
Benzo(k) fluoranthene	2	-	-	548	2100	-	2,100
Dibenzo(a,h)anthracene	2	-	-	5.5	21	-	21
Indeno(1,2,3-cd)pyrene	2	-	-	55	210	-	210

Bolded values indicate the current RSL is lower than the Industrial Cleanup Goal(s).

ALAAP = Alabama Army Ammunition Plant

COC = Chemical of Concern

HQ = Hazard Quotient

OU = Operable Unit

RSL = USEPA Regional Screening Level (June 2017) (USEPA 2017a)

TCR = Target Cancer Risk

THQ = Target Hazard Quotient

^a The current industrial RSL reflects a target cancer risk of 1×10^{-5} and an HQ of 1.

^b Only industrial COCs are included because the current and future land use is industrial, and cleanup levels were derived only for this land use.

^c The selected RSL is the lower of the cancer and noncancer RSL.

However, remediation goals represent an upper limit of acceptable concentrations but do not necessarily represent actual concentrations to which receptors may be exposed. Therefore, EPCs present at the study areas following remediation were compared to the current EPA industrial RSLs in Table 5-3. These EPCs were identified in the Final ALAAP – Area B Supplemental RI (SAIC 2001), Project Report for Landfill Maintenance and PAH Contaminated Soil Removal (for Study Area 2) (SES 2009b), and Results of Investigations for the South Georgia Road Dump Site (SAIC 2004).

For OU-7, Table 5-3 shows EPCs in soil exceeding the current adjusted industrial RSL for arsenic, lead, and 2,4-DNT. These exceedances are discussed below:

- Arsenic EPCs exceed the adjusted industrial RSL of 30 at Study Areas 3, 8 (subsurface soil), 17, 18, 19, and Building 6 – Coke Oven soils, ranging from 41 to 54 mg kg (i.e., up to approximately two times the RSL). For these study areas, the arsenic data sets were small, such that the 95 percent upper confidence limit (UCL) exceeded the maximum detected value or was not calculated. However, it is important to evaluate these exceedances in the context of background. The Area B background comparison values for arsenic (i.e., two times the background mean concentration) are 15 mg kg in surface soil and 42 mg kg in subsurface soil, which shows that these maximum detected concentrations only exceed the background values by one to three times.
- Lead EPCs exceed the industrial RSL of 800 at the South Georgia Road Dump where the mean concentration is 964 mg kg in surface soil and 399 mg kg in subsurface soil. Although the surface soil mean concentration exceeds the industrial RSL of 800 mg kg, it is below the industrial worker cleanup goal calculated using EPA's Adult Lead Model (1,050 mg kg) (EPA 2017b). This model is applicable to the FYR evaluation process because it was used in the past to calculate blood lead levels and cleanup goals for the South Georgia Road Dump (SAIC 2004) and is currently used to calculate blood lead levels and cleanup levels for workers in an industrial setting. The lead cleanup level calculations are shown in Attachment F.
- The 2,4-DNT maximum detected subsurface soil concentration of 99 mg kg at Study Area 2 exceeds the industrial soil RSL of 34 mg kg by approximately three times. In residual soil samples (i.e., soils remaining after the removal action), 2,4-DNT was detected in only one of six subsurface soil samples at a depth of 1 foot BLS. Although a 95 percent UCL was calculated, the value exceeded the maximum concentration (and thus the maximum was used as the EPC for risk assessment). 2,4-DNT was not identified as a surface soil COC for any land use in the OU-7 ROD. Note that it was detected in one of seven surface soil samples at a maximum detected concentration of 0.48 mg kg.

For OU-2, Table 5-3 shows no exceedances. For OU-6, Table 5-3 shows the 2,4-DNT EPC in Study Area 2 subsurface soil (i.e., 99 mg kg) exceeding the current adjusted industrial RSL of 34 mg kg. This exceedance was discussed previously as part of OU-7.

In summary, while there have been no changes to land use and exposure pathways, some changes have been made to toxicity values (Table 5-1), exposure assumptions, and risk methods, based on EPA guidance. The effect of these changes was assessed in two ways:

- By comparing the study area cleanup goals to current industrial RSLs (reflecting a target cancer risk of $1 \cdot 10^{-5}$ and a target HQ of 1) (Table 5-2)
- By comparing the study area EPCs to the current industrial RSLs (Table 5-3).

Table 5-3. Comparison of Exposure Point Concentrations^a in Soils to Current Industrial RSLs
ALAAP Operable Unit 7 Five-Year Review
Alabama Army Ammunition Plant, Childersburg, Alabama

Operable Unit 7														
Residential and Industrial COCs ^b	Study Area	Current Industrial Soil RSL ^c (mg/kg)	SA 2 Soil EPC (mg/kg)	SA 3 Soil EPC (mg/kg)	SA 4 Soil EPC (mg/kg)	SA 7 Soil EPC (mg/kg)	SA 8 Soil EPC (mg/kg)	SA 10W Soil EPC (mg/kg)	SA 16 Soil EPC (mg/kg)	SA 17 Soil EPC (mg/kg)	SA 18 Soil EPC (mg/kg)	SA 19 Soil EPC (mg/kg)	B6 Soil EPC (mg/kg)	SGRD Soil EPC (mg/kg)
Antimony	8	470	-	-	-	-	70	-	-	-	-	-	-	-
Arsenic	2, 3, 8, 16, 17, 18, 19, B6	30	21	43	-	-	25, 51 (sb)	-	27	47/54 (sb)	41	50 (sb)	46 (sb)	-
Lead	4, 8, 10W, 16, SGRD	800/1,050 ^d	-	-	477/274 (sb)	-	221 (sb)	259	470/253 (sb)	-	-	-	-	964/399 (sb)
Nickel	8	22,000	-	-	-	-	11000	-	-	-	-	-	-	-
2,4-Dinitrotoluene	2	34	99 (sb)	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trinitrotoluene	7, 16	510	-	-	-	62 (sb)	-	-	95 (sb)	-	-	-	-	-
Benzo(a)anthracene	2, 8, 16	210	2.2	-	-	-	16	-	2.6	-	-	-	-	-
Benzo(a)pyrene	2, 8, 16	21	2	-	-	-	8.9	-	2.8	-	-	-	-	-
Benzo(b)fluoranthene	2, 8, 16	210	2.7	-	-	-	7.7	-	4.4	-	-	-	-	-
Benzo(k)fluoranthene	2	2100	0.9	-	-	-	-	-	-	-	-	-	-	-
Dibenzo(a,h)anthracene	2, 8, 16	21	0.5	-	-	-	0.74	-	0.38	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	2, 8, 16	210	1.2	-	-	-	4.2	-	1.4	-	-	-	-	-

Operable Unit 2					
Industrial COC	Study Area	Current Industrial Soil RSL ^c (mg/kg)	SA 7 Soil EPC (mg/kg)	SA 10W Soil EPC (mg/kg)	SA 21 Sed EPC (mg/kg)
1,3-Dinitrobenzene	6, 7, 10W, 21	82	ND/ND	ND/ND	ND/ND
Tetryl	6, 7, 10W, 21	2,300	0.27/ND (sb)	0.86/187 (sb)	0.63/180 (sb)
2,4,6-Trinitrotoluene	6, 7, 10W, 21	510	0.33/62 (sb)	ND/0.25 (sb)	0.35/15 (sb)
Lead	6, 7, 10W, 21	800/1,050 ^d	21/37 (sb)	259/62 (sb)	34/30 (sb)

Operable Unit 6 ^e						
Industrial COC	Study Area	Current Industrial Soil RSL ^c (mg/kg)	SA 2 Soil EPC (mg/kg)	SA 16 Soil EPC (mg/kg)	SA 17 Soil EPC (mg/kg)	SA 19 Soil EPC (mg/kg)
1,3-Dinitrobenzene	2, 16, 17, 19	82	0.055/ND	ND/ND	ND/ND	ND/ND
2,4-Dinitrotoluene	2, 16, 17, 19	34	0.45/99 (sb)	ND/15	0.084/ND	ND/ND
2,6-Dinitrotoluene	2, 16, 17, 19	15	ND/0.15	ND/0.3	ND/ND	ND/ND
Tetryl	2, 16, 17, 19	2,300	ND/ND	ND/0.58	ND/ND	ND/ND
1,3,5-Trinitrobenzene	2, 16, 17, 19	32,000	ND/ND	ND/0.22	ND/ND	ND/ND
2,4,6-Trinitrotoluene	2, 16, 17, 19	510	ND/ND	ND/95	ND/ND	ND/ND
Lead	2, 16, 17, 19	800/1,050 ^d	71/23	470/253 (sb)	18/16	62/26 (sb)

ALAAP = Alabama Army Ammunition Plant
COC = Chemical of Concern
EPC = Exposure Point Concentration
HQ = Hazard Quotient

PAH = Polynuclear Aromatic Hydrocarbon
PRG = Preliminary Remediation Goal
RI = Remedial Investigation
ROD = Record of Decision

RSL = Regional Screening Level
SA = Study Area
UCL = Upper Confidence Limit

sb = Indicates subsurface soil; all other concentrations (i.e., those with no indication) are surface soil.
^a The EPC is the lower of the 95% UCL or the maximum detected concentration; EPCs were taken from ALAAP Final Area B RI, Appendix J (SAIC 2001), ALAAP Project Report for Landfill Maintenance and PAH Contaminated Soil Removal (SES 2009b) (for PAHs at SA 2), and Results of Investigations for the South Georgia Road Dump Site (SAIC 2004).
^b The source for the chemicals of concern is the 2012 ALAAP Area B ROD (Table 2-19); residential COCs are included to ensure that changes to toxicity do not cause residential COCs to become industrial COCs.
^c Based on a target cancer risk of 1 × 10⁻⁵ and a target HQ of 1.
^d The EPA RSL is 800 mg/kg; however, the PRG calculated using the Adult Lead Model (EPA 2017b) is 1,050 mg/kg.
^e Study Area 22 was not included in this comparison because the capping of the landfill rendered human health exposures to the landfill soil incomplete.

The comparisons show that most of the remaining site COC EPCs meet the current industrial RSLs and therefore are protective of human health. The two exceptions are: 1) arsenic in soils at Study Areas 3, 8, 17, 18, 19, and Building 6 – Coke Oven; and 2) 2,4-DNT in subsurface soil at Study Area 2. However, arsenic is naturally occurring in soil and the exceedances are modest, with concentrations exceeding the RSL up to two times and exceeding the background comparison values up to three times. It is believed that the arsenic concentrations in soil are more indicative of natural variability rather than site-related contamination.

For 2,4-DNT at Study Area 2, the maximum subsurface soil concentration (99 mg/kg) exceeds the current industrial RSL by approximately three times. However, in residual soil samples (i.e., soils remaining after the removal action), 2,4-DNT was detected only once in six subsurface soil samples and once in seven surface soil samples (at a maximum concentration of 0.48 mg/kg). Concentrations at the surface do not exceed the current industrial RSL and a realistic subsurface soil EPC (i.e., the concentration used to calculate risk) would likely be significantly lower than 99 mg/kg. This is because the 99 mg/kg represents one sample location and workers are more likely to average their exposure across an area (i.e., the exposure unit) (where other concentrations are nondetect or significantly lower) rather than remain in one place. In addition, exposure to subsurface soil would likely involve mixing of the subsurface soil with the surface soil, which would result in reducing the EPC. For these reasons, it is believed that this one concentration exceeding the industrial RSL would not result in unacceptable risk.

5.2.3 Ecological Risk

This section addresses the information related to ecological risk for Question B. The following is excerpted from the Third FYR Report for the site (Leidos 2014) as it remains technically accurate. An assessment of the considerations posed by Question B follows the excerpted text.

An ERA defines the likelihood of harmful effects on plants and animals and their habitats as a result of exposure from chemicals. An ERA for the ALAAP – Area B study areas was conducted as part of the Supplemental RI (SAIC 2001) in accordance with EPA guidance (EPA 1997). Steps 1 and 2 of the Superfund ERA process (EPA 1997) involve a SERA, which uses conservative exposure and effects assumptions to identify chemicals of potential ecological concern (COPECs). A SERA for the study areas at ALAAP was conducted and identified a variety of metals, organics, and explosive-related compounds as COPECs (i.e., HQs > 1) in the surface soil, sediment, and surface water.

Following completion of the SERA (Steps 1 and 2), a BERA (Steps 3 through 7 of an ERA) was conducted for study areas where the SERA identified a potential concern. These steps included scientific management decision points during the work. A BERA uses less conservative (more realistic, site-specific data) exposure and effects assumptions to further evaluate identified COPECs. In addition to surface soil, surface water, and sediment data, the BERA performed for ALAAP used site-specific biological data, including bioassays, tissue concentrations, and field-observed effects. For bioassays, soil samples were used for earthworm growth and mortality and plant germination, sediment samples were used for sediment-dweller growth and mortality, and surface water samples were used for water-flea growth and mortality. Bioassay results were used directly to help confirm ecological risk and especially to establish ecological remedial goal options for soil- and sediment-dwelling receptors. Tissue concentrations and field-observed effects support or provide context and site-specific inputs for the BERA (Steps 3 through 7 of an ERA).

The BERA identified metals and organics as ecoCOCs (i.e., HQs > 1 with the refined BERA assumptions) for the surface soil, sediment, and surface water media for study areas addressed in the Third FYR. The ecoCOCs identified in the BERA are shown in Table 5-4.

**Table 5-4. Summary of EcoCOCs from the RI and FS for OU-7 Study Areas
Alabama Army Ammunition Plant, Childersburg, Alabama**

Study Area	Medium	EcoCOCs from RI BERA	EcoCOCs Following FS WOE
2 – Smokeless Powder Facility	Soil	Aluminum	None
		Arsenic	
		Barium	
		Chromium	
		Lead	
		Manganese	
		Vanadium	
		Zinc	
3 – Sanitary Landfill and Lead Facility	Soil	Arsenic	None
		Cobalt	
		Lead	
		Vanadium	
4 – Manhattan Project Area	Soil	Aluminum	None
		Lead	
		Zinc	
7 – Northern TNT Manufacturing Area	Soil	Lead	No further evaluation needed in the WOE because the site was remediated
8 – Acid/Organic Manufacturing Area	Soil	Aluminum	None
		Arsenic	
		Barium	
		Lead	
		Manganese	
		Molybdenum	
		Nickel	
		Vanadium	
		Zinc	
10W – Tetryl Manufacturing Area	Soil	Lead	None
16 – Flashing Ground	Soil	Aluminum	None
		Arsenic	
		Barium	
		Cadmium	Cadmium was eliminated as an ecoCOC following the WOE as a risk management decision
		Copper	Copper was eliminated as an ecoCOC following the WOE as a risk management decision
		Lead	None
		Mercury	
		Nickel	
		Vanadium	
		Zinc	
	Sediment	None	No further evaluation needed in the WOE because no ecoCOCs were identified in the BERA
	Surface Water	Cobalt	None
		Iron	
		Manganese	

**Table 5-4. Summary of EcoCOCs from the RI and FS for OU-7 Study Areas
Alabama Army Ammunition Plant, Childersburg, Alabama (Continued)**

Study Area	Medium	EcoCOCs from RI BERA	EcoCOCs Following FS WOE
17 – Propellant Shipping Area	Soil	Aluminum	None
		Arsenic	
		Barium	
		Manganese	
18 – Blending Tower Area	Soil	Arsenic	None
		Chromium	
		Manganese	
		Vanadium	
19 – Lead Facility	--	None	No further evaluation needed in the WOE because no ecoCOCs were identified in the BERA
21 – Red Water Ditch	Sediment	Acetone	None
		Arsenic	
		Chromium	
		Copper	
		Lead	
		Manganese	
		Pyrene	
	Surface Water	Aluminum	None
		Barium	
		Carbon disulfide	
		Iron	
22 – Demolition Landfill	Soil	Lead	No further evaluation needed in the WOE because the landfill had been capped
		Mercury	
		Nickel	
		Zinc	
26 – Crossover Ditch	Sediment	Acetone	None
		Arsenic	
		Chromium	
		Manganese	
	Surface Water	Aluminum	None
		Barium	
		Iron	
CERFA Study Area – Building 6 – Coke Oven	Soil	Manganese	None
		Aluminum	
		Arsenic	
		Lead	
South Georgia Road Dump	Soil	Zinc	None
		Aluminum	
		Arsenic	
		Lead	

Note:

Ecological COCs from the RI are for an HQ >1.

BERA = Baseline Ecological Risk Assessment

CERFA = Community Environmental Response Facilitation Act

ecoCOC = Ecological Chemical of Concern

FS = Feasibility Study

HHRA = Human Health Risk Assessment

HQ = Hazard Quotient

OU = Operable Unit

RI = Remedial Investigation

Tetryl = Trinitrophenylmethylnitramine

TNT = Trinitrotoluene

WOE = Weight-of-Evidence

-- = Not Logically Applicable

As a result of the BERA, no further evaluation of ecological risk was recommended for soil at Study Areas 6, 7, 19, and 22 and sediment at Study Area 16. These sites did not require any further evaluation based on ecological risks as the sites had already been remediated, no COCs were present with HQs above 10, and bioassay data supported the absence of adverse ecological effects.

Based on the results of the BERA, further evaluation of ecological risk was conducted and presented in the FS for ALAAP – Area B (SAIC 2008) for the following OU-7 study areas and media where HQs were calculated greater than or equal to 10 (for ecoCOCs identified in the BERA):

- Soil at Study Areas 2, 10W, 16, and 17
- Surface water at Study Areas 16 and 21
- Sediment at Study Area 21.

A WOE evaluation was used to help risk managers determine the appropriate ecoCOCs for further evaluation in the Area B FS. This work entails Steps 3 through 7, and especially Steps 6 and 7, of the eight-step ERA process (EPA 1997). The WOE evaluation used the results of the BERA, as well as relevant nature and extent information, to select the COCs that were evaluated further in the FS. Media included in the WOE evaluation for ecoCOCs were soil, surface water, and sediment. Each ecoCOC identified in soil, surface water, and sediment was evaluated in the WOE screening using the following eight criteria: 1) known history of use, 2) frequency of detection, 3) comparisons with background, 4) confidence in toxicity data, 5) confidence in ecological exposure data, 6) significance of magnitude of risk, 7) ground-truthing evidence of adverse impacts, 8) habitat availability with likely future use.

Complete descriptions of the WOE criteria and the WOE evaluations are provided in the Third FYR and are summarized in Table 5-4. The WOE evaluation resulted in the elimination of all ecoCOCs or a determination that no further evaluation was needed for specific ecoCOCs.

An assessment of the considerations posed by Question B is presented below.

5.2.3.1 Changes in Toxicity and Other Contaminant Characteristics

No known toxicity values have changed since the time of the ROD, which was finalized in 2010. While EPA has compiled more toxicity numbers since the RI was prepared in 2001 and published or updated them as ecological soil screening levels (ecoSSLs) in 2005, the final eco-SSL values have not changed significantly from earlier toxicity compilations according to the introductions of ecoSSLs that EPA published in 2005. The conservative nature of the SERA and BERA presented in the ALAAP – Area B RI, such as the application of no-observable-adverse-effect levels (NOAELs) and lowest-observable-adverse-effect levels (LOAELs) and the process for determining an ecoCOC at each of the study areas investigated in OU-7 remains, and what was determined to be a COC at the time of the RI would still be considered a COC. Note that after the COCs were identified, additional WOE and scientific risk management decisions related to the COCs was applied and documented in the ALAAP – Area B FS, which was finalized in 2008. The results of the analysis showed that none of the earlier COCs remained at any of the study areas.

5.2.3.2 Changes in Risk Assessment Methods

Risk assessment methods are the same as those used to conduct the SERA and BERA in the ALAAP – Area B RI (EPA 1997) and FS. EPA uses an eight step procedure consisting of exposure and risk assessments (first two steps) followed by additional scientific and risk management decision steps (next six steps). First, a conservative SERA was performed followed by a less conservative BERA. These mathematical predictions were later followed by a WOE analysis that helped risk managers determine the appropriate COCs for further evaluation in the FS. The WOE used the results of the risk assessment along with other factors, including history of use, chemical concentration data, exposure, possible effects, and land use for the evaluation. Together, an overall conclusion was reached whether the COC was retained and evaluated in the FS.

5.2.3.3 Changes in Exposure Pathways

The exposure assumptions and exposure pathways are the same as those used for the BERA and RI and documented in the ALAAP – Area B ROD, which was finalized in 2010. The exposure assumptions and exposure pathways are also the same as those discussed in the Third FYR, which had a triggering action date of June 19, 2013. The Third FYR document was finalized in January 2014. Exposure concentrations were and have continued to be the maximum concentration for initial screening and the 95th percentile for later screening. In cases where a 95th percentile is not available, mean concentrations were (and would be) used in the BERA. The exposure pathways and other exposure mechanisms were and have continued to be ingestion of food and water and contact. Exposure for both terrestrial food chains and aquatic exposure were determined to be part of the ALAAP – Area B BERA. This also included the use of bioaccumulation factors. The current and future land use is industrial, which has not changed since the BERA and RI have been prepared. Ecological receptors and routes of exposure have not changed nor needed to be changed since the BERA and RI have been prepared.

5.2.3.4 Expected Progress Toward Meeting RAOs

It was shown in the last FYR that all COCs from the SERA and BERA were not applicable. It was concluded after conducting the WOE evaluation (steps 3 through 7 of the eight-step ERA process) and risk management (step 8) considerations that there is no unacceptable risk. This means there is no need for RAOs for protection of ecological resources.

5.2.3.5 Emergence of Industrial Land Use

As stated, future land use at ALAAP – Area B is planned to be industrial or commercial. In concert with this land use, the Childersburg LRA has performed clear-cutting across almost all of ALAAP – Area B and parcels have been developed for industry. Even if portions of a forest at a given study area have not been removed, the remaining habitat is still subject to the definitions and implications of commercial and industrial land use. Thus, the paramount concern for the land at OU-7 is operation of businesses and enterprises with lower attention to the protection and propagation of wildlife at ALAAP – Area B or at any of the OU-7 study areas. The standard of protection of ecological resources (assuming wildlife management was paramount) on which the ERA was based no longer applies to the study areas. The conservative exposure and other assumptions are no longer applicable at OU-7 and the study areas are not logically considered places to protect solely for the use of ecological receptors. The land is not being managed for ecological resources but rather for industrial use and economic development.

5.3 QUESTION C: HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

Historical documents addressing ALAAP – Area B indicate that ACM was used extensively in the form of transite siding and roofing materials and in insulating wrappings for tanks, steam lines, and hot water lines in both the process and support facilities. Demolition of site facilities resulted in the spreading of asbestos across some study areas (DA 1978, ESE 1981, 1986). Available documentation also indicates that some efforts were taken by the Army to remediate asbestos.

In the winter spring of 2017, the Army undertook an effort to determine if ACM was present on the ground surface at ALAAP – Area B, and if present, to document its location and horizontal extent. During the inspection, areas of ACM were identified and mapped (Leidos 2017b). The report for this investigation documented that ACM was present in varying amounts across ALAAP – Area B. The Army conducted asbestos abatement measures from January through April 2018 to remove all ACM from the ground surface (SCMC 2018a, 2018b). Although all of the exposed ACM has been removed from the site, it is possible that there are pieces of ACM remaining under soil, sediment, and organic matter deposited over the decades since structures were demolished that may become exposed in the future. It is unknown if the remaining ACM poses a human health risk because a risk assessment has not been conducted.

6. ISSUES/RECOMMENDATIONS

Issues and Recommendations Identified in the Five-Year Review:				
OU-7	Issue Category: Changed Site Conditions			
	Issue: Although abatement was conducted to remove ACM from the ground surface at ALAAP – Area B, it is possible that there are pieces of ACM remaining under soil, sediment, and organic matter deposited over the decades since structures were demolished. The degree of human exposure to this ACM is unknown.			
	Recommendation: Evaluate whether the current and likely future activity at ALAAP – Area B could result in human exposure to ACM above a level of concern for commercial/industrial receptors.			
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
Yes	Yes	Army	ADEM/EPA	3/1/2021

7. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)

Operable Unit:

OU-7

Protectiveness Determination:

Protectiveness Deferred

Addendum Due Date**(if applicable): March
2021**

A protectiveness determination cannot be made at this time. Additional time is needed to determine if the current and likely future activity at ALAAP – Area B could result in human exposure to ACM above a level of concern for commercial/industrial receptors. It is expected that these actions will take approximately 24 months to complete. At that time, a protectiveness determination will be made.

8. NEXT REVIEW

The next FYR report for the ALAAP – Area B Superfund Site is required 5 years from the completion date of this review. This FYR is required to be completed by September 5, 2018.

9. REFERENCES

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ATTACHMENT A

EPA, ADEM, AND ARMY CORRESPONDENCE RELATED TO 2013 FIVE YEAR REVIEW



Alabama Department of Environmental Management
adem.alabama.gov
1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

June 17, 2013

Mr. Bill Woodall
Chief, Environmental and HTRW Section
US Army Corps of Engineers, Mobile District
Post Office Box 2288
Mobile, Alabama 36628-0001

RE: ADEM Review and Concurrence

Draft Final Third Five-Year Review Report
Alabama Army Ammunition Plant, Childersburg, Alabama
DSMOA Fund Code: 1535-223-0449

Dear Mr. Woodall:

The Alabama Department of Environmental Management (ADEM or the Department) has reviewed the *Draft Final Third Five-Year Review Report* for the Alabama Army Ammunition Plant (ALAAP) dated May 24, 2013. The Department concurs with this draft final report.

If you have any questions or concerns regarding this matter, please call Adam Warnke at (334) 271-7782 of ADEM's Remediation Engineering Section.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephen A. Cobb", is written over a horizontal line.

Stephen A. Cobb, Chief
Governmental Hazardous Waste Branch
Land Division

SAC/TPS/ALW/LAC

cc: Tom Fultz, USACE
Melissa L. Shirley, USACE
Tracy Strickland, ADEM

Ben Bentkowski, EPA
Bill Millar, Calibre Systems
Jason T. Wilson, ADEM

Tim Woolheater, EPA





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

SEP 05 2013

Mr. Andrew Van Dyke
Army Program Manager, Operations
Army Medical Branch
Department of the Army
Assistant Chief of Staff for Installation
Management
Taylor Building, Room 5000
2530 Crystal Drive
Arlington, Virginia 22202

Dear Mr. Van Dyke:

The United States Environmental Protection Agency has completed the review of the Alabama Army Ammunition Plant Draft Final Five-Year Review (FYR) Report dated May 2013 (Draft Final FYR). It is an EPA Federal Facility program priority that the Agency's review of the FYR is completed to ensure remedies are or will be protective of human health and the environment. The purpose of this letter is for EPA to either concur with the report findings, or provide EPA's own independent findings and protectiveness determinations. Many of EPA's comments have been addressed in the revised document; however, EPA does not agree with the protectiveness determinations and has prepared its own determination, as noted below.

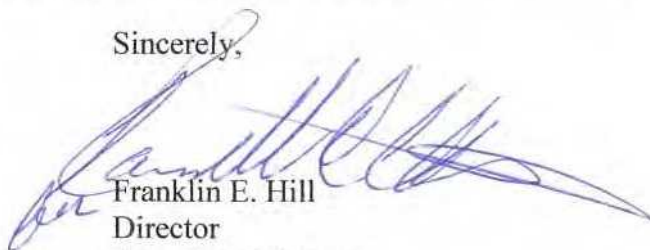
EPA has made changes to the Protectiveness Statements for OU-1, OU-2, and OU-6. These changes are captured through the enclosed edited FYR Summary Form from the Draft Final FYR Report. The EPA protectiveness determinations will be reported to Congress and entered into CERCLIS.

EPA anticipated that our agencies could work through any remaining issues with regard to EPA's comments and the protectiveness determinations prior to finalizing the Report and suggested that the agencies use an informal dispute resolution process to finalize the Report. The Army's response indicated that dispute was not available to the parties due to the fact that the FYR is not a primary document. Though not a primary document, Section XX of the Federal Facility Agreement states that the dispute resolution language (Section XXVIII) would be utilized to resolve any dispute over EPA's protectiveness statement. EPA looks forward to meeting with the Army to resolve the issues of the Draft Final FYR.

Thank you for your continued efforts to complete this FYR and your commitment in working with EPA to make the necessary changes to the Draft Final FYR Report. Our goal is to ensure this document accurately reflects the status of the selected remedies and that they are protective of human health and the environment in the long term.

Please coordinate with the ALAAP Remedial Project Manager, Tim Woolheater, to finalize the document by addressing the comments previously transmitted to the Army.

Sincerely,

A handwritten signature in blue ink, appearing to read "Franklin E. Hill", is written over the typed name and title.

Franklin E. Hill
Director
Superfund Division

Enclosure

**FIVE-YEAR REVIEW PROTECTIVENESS DETERMINATIONS FOR
ALABAMA ARMY AMMUNITION PLANT SUPERFUND SITE
TALLADEGA, ALABAMA**



Prepared by

**U.S. Environmental Protection Agency
Region 4
Atlanta, GA**



**Franklin E Hill, Director
Superfund Division**



Date

PURPOSE

In May 2013, the U.S. Army submitted the Draft Final Third Five-Year Review Report for the Alabama Army Ammunition Plant – Area B Superfund Site, in Talladega County, Alabama. Though many of the EPA comments generated from review of the draft document were addressed appropriately, EPA could not concur with the protectiveness statements made in the Draft Final document. This document revises the protectiveness determination from the Draft Final Five-Year Review in order to better characterize the current situation at the former ammunition plant.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Alabama Army Ammunition Plant		
EPA ID: AL6210020008		
Region: 4	State: AL	City/County: Childersburg/Taladega
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	Has the site achieved construction completion? No	
REVIEW STATUS		
Lead agency: Other Federal Agency If "Other Federal Agency" was selected above, enter Agency name: U. S. Army		
Author name (Federal or State Project Manager): Timothy R. Woolheater		
Author affiliation: USEPA		
Review period: May 2012 – August 2013		
Date of site inspection: July 12, 2012		
Type of review: Statutory		
Review number: 3		
Triggering action date: June 19, 2008		
Due date (five years after triggering action date): June 13, 2013		

Five-Year Review Summary Form (continued)

Issues/Recommendations

OU(s) without Issues/Recommendations Identified in the Five-Year Review:

NA

Issues and Recommendations Identified in the Five-Year Review:

OU(s): 1, 2, 6, and NHWL	Issue Category: Monitoring			
	Issue: Non-Hazardous Waste Landfill (NHWL) does not include monitoring			
	Recommendation: Establish a periodic monitoring program to determine whether contaminants are leaching from landfill.			
Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
No	Yes	Federal Facility	EPA/State	12/15/2017

OU(s): 1, 2, 6, NHWL and Asbestos landfills	Issue Category: Institutional Controls			
	Issue: Institutional controls have been put in place but were not called for in decision documents.			
	Recommendation: Appropriately document the need for ICs in a decision document			
Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
No	Yes	Federal Facility	EPA/State	12/15/2016

OU(s): 2, 6, NHWL and Asbestos landfills	Issue Category: Operations and Maintenance			
	Issue: Maintenance requirements presented in transfer agreements have not been developed in a maintenance planning document for use by the City in ensuring requirements are met.			
	Recommendation: Develop a formal maintenance plan with the City of Childersburg			
Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
No	Yes	Federal Facility	EPA/State	12/15/2015

OU(s): 1, 2, 6, NHWL and Asbestos landfills	Issue Category: Changed Site Conditions			
	Issue: The NHWL and the Asbestos landfills were not appropriately selected in the remedy decision documents for OU's 1, 2, and 6.			
	Recommendation: Revised the decision documents			
Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
No	Yes	Federal Facility	EPA/State	12/15/2017

Protectiveness Statement		
<i>Operable Unit:</i> 1	<i>Protectiveness Determination:</i> Short-term Protective	<i>Addendum Due Date (if applicable):</i> Click here to enter date.
<p><i>Protectiveness Statement:</i></p> <p>The remedy at OU1 currently protects human health and the environment in the short term because exposure pathways that could result in unacceptable risks are being controlled. All soils have been disposed in the NHWL which is capped, fenced, and observed to be maintained, and institutional controls are implemented as called for in a LUCIP, FOSET, and Quit claim deed transferring the site to the City of Childersburg. However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure protectiveness: revise the decision document to appropriately select the NHWL as the final disposal location, add requirements for monitoring to determine whether the material is leaching from the landfill, and select institutional controls as part of the remedy for the NHWL.</p>		

Protectiveness Statement		
<i>Operable Unit:</i> 2	<i>Protectiveness Determination:</i> Short-term Protective	<i>Addendum Due Date (if applicable):</i> Click here to enter date.
<p><i>Protectiveness Statement:</i></p> <p>The remedy at OU2 currently protects human health and the environment in the short term because exposure pathways that could result in unacceptable risks are being controlled. All soils, sediment, and sewer system components were excavated, incinerated, and stabilized (if necessary) and the incineration wastes isolated in the NHWL. The NHWL is capped, fenced, and observed to be maintained, and institutional controls are implemented as called for in a LUCIP, FOSET, and Quit claim deed transferring the site to the City of Childersburg. However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure protectiveness: revise the decision document to select the NHWL as the final disposal location, add requirements for monitoring to determine whether the material is leaching from the landfill, and select institutional controls as part of the remedy for the NHWL.</p>		

Protectiveness Statement

Operable Unit:
6

Protectiveness Determination:
Short-term Protective

*Addendum Due Date
(if applicable):*
[Click here to enter date.](#)

Protectiveness Statement:

The remedy at OU6 currently protects human health and the environment in the short term because exposure pathways that could result in unacceptable risks are being controlled. All soils, sediment, and sewer system components were excavated, incinerated, and stabilized (if necessary) and the incineration wastes isolated in the NHWL. The NHWL is capped, fenced, and observed to be maintained, and institutional controls are implemented as called for in a LUCIP, FOSET, and Quit claim deed transferring the site to the City of Childersburg. However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure protectiveness: revise the decision document to select the NHWL as the final disposal location, add requirements for monitoring to determine whether the material is leaching from the landfill, and select institutional controls as part of the remedy for the NHWL.

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET, S.W.
ATLANTA, GEORGIA 30303-8960

FFB

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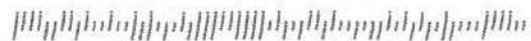
Mr. Andrew Van Dyke
Army Program Manager, Operations Army Medical Branch
Assistant Chief of Staff for Installation Management
Taylor Building, Room 5000
2530 Crystal Drive
Arlington, VA 22202



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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

April 2, 2014

4SF-FFB

Electronic Mail Delivery

Mr. Andrew Van Dyke
Army Program Manager - OAMB
Department of the Army - ACSIM
Taylor Building, Room 5000
2530 Crystal Drive
Arlington, Virginia 22202

Dear Mr. Van Dyke:

The Environmental Protection Agency has recently reviewed and commented upon the Five Year Review (5YR) and the Area B Land Use Control Implementation Plan (LUCIP) documents for the Alabama Army Ammunition Plant Site in Childersburg, Alabama. EPA issued a determination on the 5YR that differed from the Army largely due to a lack of clarity regarding the remedy selection of an onsite disposal area currently known as the Non-Hazardous Waste Landfill (NHWL). EPA sought clarification of NHWL issues in comments on the LUCIP; however, the Army responses only removed the text from the revised LUCIP without including clarification regarding the issues. EPA's 5YR determination concurred with the Army regarding short-term protectiveness; however, the long-term protectiveness could not be agreed upon due to the inappropriate remedy selection, land use control selection, and monitoring of the NHWL. In addition, clarification of specific actions taken during the cleanups is requested such that EPA can conclude that the site is protective in the long-term. With this letter, EPA requests that the Army respond to these issues such that closure can be reached regarding the overall protectiveness of the actions in Area B.

The selection and closure of the NHWL is of concern to EPA. EPA review of the Records of Decision (RODs) for Operable Units (OU) 1, 2, and 6 reveals an increasing reliance on the disposal activities to this area. The OU 1 ROD reflects disposal of soils onsite after treatment; however, the descriptions of the specifics regarding the disposal methods are not clear. For instance, the treatment standards appeared to be drawn from the characterization requirements and not the Universal Treatment Standards. Of particular concern is lead which was given a treatment standard in the ROD of 5 mg L TCLP and the Universal Treatment Standard is 0.75 mg L TCLP. It is unclear whether other contaminants met the appropriate standards prior to being disposed in the NHWL. It is also unclear whether the soils were sampled post treatment and what the specific construction standards were used to build the landfill. The ARARs section of the ROD states that the remedy will meet the RCRA standards but is unclear as to which standards would be required.

The OU 2 ROD also relies upon on-site disposal making assumptions that it was already appropriately selected. Of note, the ROD also relies on the State's issuance of a draft permit entitled, *"Treated Soils - Backfill Area Permit Application for the Alabama Army Ammunition Plant Stockpile Soils Area Operable Unit", March 1993.* In discussions with the Army regarding the permit, the Army stated that this permit was only in draft form and never finalized but the actions were approved by the State. The permit was to be used to expand the landfill area and, subsequently, close the area. The ARARs included in this ROD were 40 CFR 261 (ID hazardous wastes), 262 (Standards applicable to HW generators), 264 (Standards for Owner Operators of HW treatment, storage, and disposal fac.), AAC (AL Admin Code) Ch 13-1 to 13-7 (Solid Waste Management Regulations), Code of AL, Title 22, Ch 27 (AL Solid Waste Management, Act- safe management of non-hazardous waste), and ADEM's Ch 14-1. The universal treatment standards are not mentioned and it is not clear which portions of these ARARs were followed or met

The OU 6 ROD continues the reliance on the NHWL in a similar manner as OU 2. Standards are set for treatment though it is not clear how they would meet the Universal Treatment Standards. The ARARs are similar to OU 2 with a clarification for including concrete slabs and other construction material as required in State requirements.

EPA awaits a copy of the NHWL construction report requested from the Army. The Army is reproducing this document electronically and stated that it would take some time to have it completed by its contractor. It is hoped that the Army's records would give some clarity to EPA regarding the specifics on the constructions details of the NHWL. The following comments were sent to the Army while reviewing the Land Use Control (LUC) Remedial Design (RD) which later became the LUCIP. The Army responded by removing the text from the LUCIP; however, whether these issues were appropriately address with regard to protectiveness remains in question thereby placing doubt on the long-term protectiveness of Area B.

The section and page numbers for each of the comments listed below relate to the draft LUC RD. Those portions of the comments that remain unclear have been underlined. The comments were:

1. **Section 1.1, pg 2, NHWL:** It is mentioned that this landfill was the result of remedial actions taken place around the facility. At the same time, it is mentioned that it is not the result of CERCLA operations. Please explain. Typically, the necessity for LUCs (which is a remedy component) for a particular area or site is provided in a CERCLA decision document such as a ROD. Was this landfill regulated outside of CERCLA and issued a permit from ADEM? If not, then a ROD should be issued for this unit that describes the selected response action which presumably would include containment with engineered cap, LUCs, groundwater monitoring and maintenance of the cap. In the absence of a ROD, the LUCs that are necessary to ensure protectiveness can be specified in the LUC RD which is subject to EPA approval. However, a ROD should be issued for this unit that describes the response action which likely will include containment with engineered cap, LUCs, and maintenance of the cap.

EPA would add that, though not ideal, prior to selecting a remedy for this site, LUCs can be used to secure the site and prevent any unacceptable exposures that may exist. Inclusion of those LUCs in the LUCIP can afford the necessary protections until the remedy is selected.

2. **Section 1.3.1, pg 6. Table 3:** If the table remains in this document, please note that any soil that exhibited the toxicity characteristic (i.e. failed TCLP) at 40 CFR 261.24 are considered RCRA hazardous waste and once excavated are subject to the Land Disposal Restrictions. Consequently, soils that are considered RCRA hazardous waste must meet the LDR treatment standards at 40 CFR 268.40 or 268.49 prior to disposal in an on-site or off-site landfill. The soil disposal criteria listed on the Table are actually the TCLP levels. Please explain how the disposal criteria were applied and the disposition of soils that exceeded the criteria. Soil that was treated to meet TCLP levels must still meet LDR treatment standards before disposal in the NHWL.
3. **Section 1.3.1, pg 7. Table 4:** The sentence preceding the table indicates soils were stabilized. Please clarify if treatment was performed in-situ or ex-situ and what treatment method was employed and whether TCLP was used to verify the criteria since for the metals listed the criteria correspond to the toxicity characteristic levels at 40 CFR 261.24. As noted above, soils that are excavated and exceed TCLP are considered RCRA hazardous waste. Such soils must meet RCRA LDR treatment standards in addition to being rendered non-hazardous through treatment before being disposed in a landfill (on-site or off-site). Add footnote to table to clarify if TCLP is used to measure criteria.
4. **Section 1.3.1, pg 11.** Bulleted items “*Nonhazardous waste landfill*”: Please indicate whether ADEM regulated the landfill under its RCRA Subtitle D program and whether a permit was issued. Also, please describe whether the landfill was constructed with a bottom liner and whether groundwater monitoring wells have been installed at the boundary of the unit to detect releases from buried wastes. As stated above, EPA believes a ROD should be issued to address the NWHL and describe a selected remedy.

There were additional concerns not related to the NHWL that the Army didn’t fully address in the response to the LUC RD, as well. The following comments were also raised on the LUC RD:

1. **Section 1.3.1, pg 11.** Bulleted items “*Asbestos Repository*”: The Asbestos Repository was constructed in 1974 with the destruction of the building located in that area. Asbestos was placed in the basement of the building and then covered with two feet of soil. Please indicate whether signs are posted that indicate it is used asbestos disposal as required by asbestos NESHAP regulations. EPA believes a ROD should be issued to address the Asbestos Repository and describe the selected remedy such that it can be included in the 5YR as requested by the State.
2. **Section 1.3.1, pg 10-11.** Bulleted items “*Aniline Sludge Basin, (Study Area 9) EPA OU*”: Please specify if remedial actions in 1999 were conducted under CERCLA and date of ROD or IROD. Also, specify level of residual contamination and or whether confirmatory sampling performed. Indicate whether contamination exceeds residential use or industrial use levels.
3. **Section 1.3.1, pg 10-11.** Bulleted items “*Storage Battery and Debris Dump (Study Area 25), EPA OU*”: Please specify if remedial actions were conducted under CERCLA and date of ROD or IROD. Indicate whether the lead debris and contaminated soils were managed as RCRA hazardous waste and whether the Opelika landfill is a RCRA Subtitle C hazardous waste landfill. Also, specify level of residual contamination and or whether

confirmatory sampling performed. Indicate whether contamination exceeds residential use or industrial use levels.

4. **Section 1.3.1, pg 10-11.** Bulleted items “*TC 4-A and B, EPA OU 1*”: Please indicate the cleanup values for the soils in these areas. Also, specify if remedial actions conducted under CERCLA and what are the residual contamination levels. Specify if remaining contamination exceeds industrial or residential use levels.
5. **Section 1.3.1, pg 11.** Bulleted items “*Utility Poles and PCB Transformers*”: Please indicate what authority, CERCLA etc. was used to remove the fallen poles with transformers and the PCB contaminated soil. Indicate whether the PCB contaminated soil exceeded 50ppm and had to be disposed of as TSCA PCB waste in a TSCA chemical waste landfill. Also, specify level of residual contamination since confirmatory sampling was performed. Indicate whether contamination exceeds residential use or industrial use levels.

Finally, EPA continues to be concerned about the implementation aspects of the LUCIP. In response to EPA comments on the draft final LUCIP, the Army gave two responses that are not acceptable to EPA. EPA clarifies the concerns below each of the comments below. The comment numbers relate to the LUCIP comments issued by EPA. The response comments and responses are:

1. Army’s Response to Comment 26, 26A

The LUCIP clearly designates the locations on the “No Fishing” signs at Study Areas 21 and 26. The “No Fishing” signs are placed along the entire length of the Study Areas. The referenced RTC states that the discussion regarding the home range of the fish was inappropriate for a LUCIP and that discussion is not included.

EPA Response: Locations of a LUC are based on where a potential for exposure exists and are not limited by site boundaries. Without evaluating the ecological receptors home range along with their location on the site, the Army does not know whether the site boundary, as marked in the LUCIP, controls the risk. It is not clear whether the potential for a receptor to migrate beyond the site boundary has been evaluated, nor whether the potential for predators of the receptor to feed on the site. EPA cannot agree to placement of signage at the site boundary without adequate justification.

2. Army’s Response to Comment 33

Section III.C of the Environmental Protection Provisions attached to the Quitclaim Deed as “Exhibit C” requires that a soil excavation plan be provided to EPA and Army for their approval prior to conduct of any excavation. If disposition of the soil is not satisfactory to EPA, then EPA may require satisfactory revisions to the plan prior to EPA’s approval. The same is true with respect to Army’s requirements.

EPA’s Response: Any and all requirements, to the extent possible, need to be placed in the LUCIP document such that all parties and those not versed in the detail of the site or the agreement have a clear indication of the requirements for site use. A prospective purchaser of the property may base a purchase price on their ability to move soil to any location and find later that that is not possible. In addition, future implementers of the

LUCIP may not be as familiar with the site and may inadvertently approve soil movement to uncontaminated portions of the property without clear indication in the LUCIP. To the extent possible, the LUCIP needs to be written to prevent potential exposures and do so with as much transparency, as possible.

This letter attempts to raise the remaining EPA concerns with regard to the protectiveness issues that require resolution prior to finalizing the Area B soils remedy. It is expected that once resolved that the 5YR determinations can be modified and the LUCIP would be acceptable. EPA awaits the new schedule for the Remedial Action Completion Report (RACR) for the soils actions taken at the site. It is EPA's desire to complete the RACR in by September 1, 2014. In order to achieve this milestone, the parties will need to come to agreement on how best to resolve the issues in this letter.

In order to expedite this resolution, EPA requests a meeting with the Army by April 25, 2014. At your earliest convenience, please email me with dates that would be acceptable for a conference call. EPA looks forward to resolving these issues in a manner acceptable to all parties. Should you have any questions or concerns regarding this letter, please call me at 404-562-8510 or contact me at woolheater.tim@epa.gov.

Sincerely,

Timothy R. Woolheater, PE, MS
Senior Remedial Project Manager
Federal Facilities Branch
Superfund Division

CC: Adam Warnke, ADEM
Mr. Bill Millar, CALIBRE
Melissa Shirley, USACOE



DEPARTMENT OF THE ARMY
ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

20 May 2014

Timothy R. Woolheater
Senior Remedial Project Manager
Federal Facilities Branch, Superfund Division
US Environmental Protection Agency, Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, GA 30303-8960

SUBJECT: Response to letter from EPA Region 4 dated 2 April 2014 and conference call on 24 April 2014 Concerning Alabama Army Ammunition Plant and issues pertaining to the Third Five Year Review for Area B and the Land Use Control Implementation Plan for the Soil Sediment and Surface Water at Area B.

Dear Mr. Woolheater:

This letter is in response to the subject letter received by the Army dated April 2, 2014 and conference call held between the Army, ADEM, and your office on April 24, 2014. The initial sections of this letter presents Army's responses to some of the general issues raised in the EPA's letter and discussed during the following conference call.

Finality of the Third Five-Year Review

Following the conference call the Army and Region 4 are in agreement that the third Five Year Review for ALAAP Area B is complete and the Army version is final and the EPA's Five Year Review Protectiveness Determination is final. The parties will work to resolve outstanding issues so the agreement can be reached on the Next Five Year review scheduled for 2017.

Land Use Control Implementation Plan (LUCIP)

The parties also agreed that the LUCIP for the Alabama Army Ammunition Plant (ALAAP) Area B is final and will be used going forward. However, Army agreed that a short addendum be added to the Final LUCIP to formalize procedures for onsite movement or off-site disposal or reuse of soil that may be contaminated with explosives-related compounds and/or lead. This addition is minor and will be added to the existing copies of the document as a LUCIP implementation activity without the need to reissue the document.

Non-Hazardous Waste Landfill (NHWL)

Both EPA and Army agree that the NHWL is protective in the short-term. Army believes the NIIWL is also protective in the long-term. EPA cannot make a similar finding and has issued a long-term non-protectiveness finding dated September 5, 2013. EPA's finding stated that three actions are required in order to insure long-term effectiveness:

Revise the decision document to appropriately select the NHWL as the final disposal location, add requirements for monitoring to determine whether the material is leaching from the landfill, and select institutional controls as part of the remedy for the NIIWL.

During the April 24, 2014 conference call, EPA appears to have added the new requirement that Army demonstrate that all waste disposed in the landfill achieved the 0.75 mg/l TCLP Universal Treatment Standard (UTS) for lead.

Revise the decision document to appropriately select the NIIWL as the final disposal location

The NHWL was developed as a non-hazardous solid waste landfill for disposal of soil and ash following treatment in the onsite incinerator used for remediation of explosives in soil. Army, EPA Region 4, and the Alabama Department of Environmental Management (ADEM) were involved in the decision to use the NIIWL for disposal and agreed to its use as a disposal site for treated soil and ash. A permitting process for the landfill was started and a permit application was submitted. According to an EPA discussion with an ADEM employee, groundwater monitoring was suggested, but ADEM determined that it was not necessary. Following submission and ADEM approval of the permit application, ADEM determined that a permit was not needed.

The non-hazardous waste landfill is specifically selected in Interim Record of Decision (IROD) for OU-1, OU-2, and OU-6. This selection is demonstrated in excerpts from each of these IRODS provided in Attachment A. While it is admitted that a more complete description of the non-hazardous waste landfill could have been provided in the IROD for OU-1, a complete detailed description is not necessary to indicate its selection. The next two IRODs fully describe the NIIWL by referencing the permit application submitted to and approved by ADEM. If anyone wanted information regarding the criteria for the landfill, it would have been included in the permit application that was presumably available for review by those involved in the remedy selection process. (If not, it could have been obtained by asking.) Each IROD required that soil be treated in compliance with Land Disposal Restrictions. Taken together as a whole, there can be no doubt about what the parties selected in each of the three IRODs and the clarity and appropriateness of their selection. These remedies are also appropriately selected in §§ 2.12.1 through 2.12.3 of the ALAAP Area B Final ROD, which incorporates in turn each of the interim remedies as the final remedies for OUs 1, 2, and 6. Each of these interim remedies specifically includes the NHWL as a remedy component.

Over the past quarter of a century, EPA and ADEM have participated in every step of the selection process. EPA and ADEM have reviewed and commented upon each and every

document, often significantly and with much iteration. If either EPA or ADEM had concerns with the selection process that has been occurring over the past 25 years, then both have had more than ample opportunity to express its concern. It is Army's position that all past decisions must be afforded a presumption of regularity. "The presumption of regularity supports the official acts of public officers, and, in the absence of clear evidence to the contrary, courts presume that they have properly discharged their official duties." United States v. Chemical Foundation, Inc., 272 U.S. 1, 14-15 (1926). It is simply improper at this point, after all is said and done, to lay down the assertion that the remedies achieved by our predecessors were inappropriately selected.

It is Army's position that the selection of the NIIWL in the interim and final records of decision is both appropriate and clear and that no further exposition is required. Army considers this matter closed but for the following remaining activities that are intended to make the Administrative Record more complete.

ADDEM will perform a records search for documentation of this permit application process. As stated in EPA's letter, the OU2 ROD identified the permit application as "*Treated Soils Backfill Area Permit Application for the Alabama Army Ammunition Plant Stockpiles Soils Area Operable Unit, March 1993.*"

Regarding the construction of the NIIWL and testing of the ash and soil disposed in the landfill, Army records show that the landfill includes eight cells. There does not appear to be a single NIIWL construction report since the cells appear to have been treated as separate construction projects. There are three volumes pertaining to construction of NIIWL Cell 8 at the BRAC Office. More documentation may have been prepared at the time. The *Final Report Construction of Cell 8 Alabama Army Ammunition Plant, Childersburg, Alabama* prepared by Environmental Chemical Corp (ECC) and dated June 1998 and the *Final Report Stabilization of Incinerator Treated Soil and Fly Ash and Excavated Soil from Study Areas 14, 16, & 19 Final Cap, Cell #8 ALAAP* (volumes 1 and 2) prepared by Environmental Chemical Corp (ECC) and dated January 1999 were reviewed. These records show that Cell 8 of the NIIWL has a liner and cover that are made of heavy (30 mil), polyvinyl chloride geomembrane. All of the seams of the liner and cover were sealed in the field providing a 360 degree water tight seal around the contents. ECC placed 18,000 cubic yards of material in the cell. Once the geomembrane was completed a geotextile was installed over the geomembrane and was covered with a minimum of 8 inches of cover material. The landfill cap is currently covered with grass that is maintained by the Local Redevelopment Authority (LRA). The area is fenced and warning signs are being prepared to surround the landfill.

Army has not found documents pertaining to the construction of cells 1 through 7, but is continuing its search. The permit application for the NIIWL and other requested documents will be added to the Administrative Record if and when found. However, if the permit application and or other supporting documents cannot be found, it is Army's position that prior decisions must be afforded the presumption of regularity.

Monitoring to determine whether the material is leaching from the landfill

Pending the evaluation of any documents that may be discovered through the document search discussed later in this response, Army management has tentatively approved the installation of a detection monitoring system and its operation for a defined period of time. However, and as pointed out by EPA during the April 24, 2014 conference call, ADEM determined during the permitting process that wells would not be required. If documents located by the document search indicate a rationally supported decision that groundwater monitoring would not be applicable due to the absence of groundwater at the NHWL site, then Army would see no point in installing the system.

Select institutional controls as part of the remedy for the NHWL

Army agrees that a written inspection and maintenance plan will be prepared for the NHWL. This addition is minor and will be added to the existing copies of the document as a LUCIP implementation activity without the need to reissue the document. As demonstrated in prior sections of this letter, the NHWL is a component of the final remedy selected in the Area B soils ROD. The NHWL is also a prominent component of the Environmental Covenant signed by the Childersburg Local Reuse Authority (LRA). The Environmental Covenant is a land use control that is referenced in the administrative amendment to the final ROD. Also, the deed requires that the Childersburg LRA maintain the NHWL.

Demonstrate that all waste disposed in the landfill achieved the 0.75 mg/l TCLP Universal Treatment Standard (UTS) for lead

Even though EPA's comment on Section 1.3.1, pg 6, Table 3 recognizes that an alternate UTS for characteristic soil is promulgated at 40 CFR 268.49, during the conference call EPA incorrectly cited 0.75 mg/l lead as the UTS for the treated soil placed into the NHWL. EPA guidance explains the alternative UTS as follows:

Under the soil treatment standards in 40 CFR 268.49, a contaminated soil has two treatment requirement alternatives:

- hazardous constituents must be reduced by at least 90% through treatment so that no more than 10% of their initial concentration remains or comparable reductions in mobility for metals: **OR**
- hazardous constituents must not exceed 10 times the universal treatment standards (UTS) at 40 CFR 268.48.

Constituents in contaminated soils are not required to be reduced to levels lower than 10 times UTS, unless specified under a site-specific cleanup requirement (e.g., permit or order).

EPA, "Land Disposal Restrictions: *Summary of Requirements*," at 4-9 (EPA530-R-01-007, Revised August 2001).

EPA created the alternative treatment standards for soils at 40 CFR 268.49(c)(1) to encourage more feasible cleanups of hazardous contaminated soil that is subject to the LDRs. *Id.* at 4-10. Therefore, in accordance with the alternative standard for soil, the alternative UTS for lead is **7.5 mg/l**. EPA has also determined that the alternative standard continues to be protective of human health and the environment. *Id.* The requirement to comply with the LDR treatment standards is specifically included in the OU-1, OU-2, and OU-6 RODS.

The purpose of the incineration of the soil was to treat the soil to remove explosives. After treatment, samples of the soil were collected from the incinerator out-feed and tested for lead by the Toxicity Characteristic Leachate Procedure (TCLP). The first seven NIIWL cells contain soil that passed TCLP for lead. The soil that failed TCLP were stockpiled for treatment to reduce lead in the TCLP leachate. The stockpiled soil was stabilized in a pug mill with lime, tested, and added to NIIWL Cell 8.

Each lift of soil added to Cell 8 was sampled on a grid pattern. Roughly 100 samples of Cell 8 soil were collected. All of the samples were analyzed following the TCLP and none of the samples exceeded the 7.5 mg/L UTS standard for treated soil or the 5 mg/l standard for untreated soil. In fact, only seven samples exceeded 0.75 mg/l lead and only four of those exceeded 1 mg/l lead. Sample results are tabulated in Attachment B. Therefore, there are no short-term or long-term protectiveness issues resulting from lead content in the disposal of treated soil because the soil significantly achieves the UTS treatment standard determined to be protective by EPA and because both the treated and untreated soil achieve the 5.0 mg/l lead TCLP level of protectiveness required for soil disposed as a non-hazardous solid waste.

Explanation of Significant Difference

After further consideration and review of presently available documents and based on Army's above responses to the long-term protectiveness issues raised by EPA, it is Army's position that the NIIWL is a properly selected component of the interim and final remedies and that an ESD is not required to describe the selection, construction, operation, or closure of the NIIWL. An ESD may be necessary if a groundwater monitoring system is determined by BRACO management to be an appropriate requirement.

Army understands that EPA desires resubmission of available information on the NIIWL. The Army is reviewing all documentation available at the BRAC Office and at US Army Corps of Engineers (USACE) contractor Leidos' office in Reston, Virginia. There is a file cabinet full of documents at the BRAC office and 50 to 60 Banker boxes at Leidos to look through. Once a comprehensive list of documents is prepared, the Army team will look for records pertaining to construction of the NIIWL and review those documents for more information. A list of NIIWL documents will be shared with the EPA and ADEM. It is possible that some of the records pertaining to the NIIWL have been lost over the years and the documentation may no longer be complete. All of the pertinent documents were provided in submittals to EPA and ADEM at the time they were prepared, so copies of the documents sought may be available in agency archives at EPA and ADEM.

The Army has a contract in place to digitize documents pertaining to environmental work completed at ALAAP that are stored at the BRAC Office and Leidos. The Army is planning on making these digitized records available to EPA Region 4 and ADEM. The contractor is estimating that the digitized records will be available in August. These searchable digitized records should make finding information on historical environmental work done at ALAAP easier.

Once the digitizing process is completed, the Army will evaluate the appropriateness of submitting an Explanation of Significant Difference (ESD). If an ESD is prepared, it is the Army's intent to limit the scope of the ESD to address only groundwater monitoring around the NIIWL. The Applicable or Relevant and Appropriate Requirements (ARARs) in the ESD would be limited to those directly relevant to the groundwater monitoring system installation, maintenance, sampling, and analyses at the NIIWL.

Comments Related to the NIIWL

Your letter listed several comments that required additional response. You listed the sections and page numbers related to the draft LUC RD and underlined the portions of the comments that remain unclear to you. Following are the comments and Army responses:

1. **Section 1.1, pg 2, NIIWL:** It is mentioned that this landfill was the result of remedial actions taken place around the facility. At the same time, it is mentioned that it is not the result of CERCLA operations. Please explain. Typically, the necessity for LUCs (which is a remedy component) for a particular area or site is provided in a CERCLA decision document such as a ROD. Was this landfill regulated outside of CERCLA and issued a permit from ADEM? If not, then a ROD should be issued for this unit that describes the selected response action which presumably would include containment with engineered cap, LUCs, groundwater monitoring and maintenance of the cap. In the absence of a ROD, the LUCs that are necessary to ensure protectiveness can be specified in the LUC RD which is subject to EPA approval. However, a ROD should be issued for this unit that describes the response action which likely will include containment with engineered cap, LUCs, and maintenance of the cap.

EPA would add that, though not ideal, prior to selecting a remedy for this site, LUCs can be used to secure the site and prevent any unacceptable exposures that may exist. Inclusion of those LUCs in the LUCIP can afford the necessary protections until the remedy is selected.

Army Response: It is agreed between the parties that a plan will be prepared for the inspection and maintenance of the NIIWL. This plan will be attached to the LUCIP as a LUC implementation activity. There is no additional requirement for a separate ROD for the NIIWL as it is included as a component of the remedies in three IRODs and the Final ROD.

2. **Section 1.3.1, pg 6, Table 3:** If the table remains in this document, please note that any soil that exhibited the toxicity characteristic (i.e., failed TCLP) at 40 CFR 261.24 are considered RCRA hazardous waste and once excavated are subject to the Land Disposal Restrictions. Consequently, soils that are considered RCRA hazardous waste must meet the LDR

treatment standards at 40 CFR 268.40 or 268.49 prior to disposal in an on-site or off-site landfill. The soil disposal criteria listed on the Table are actually the TCLP levels. Please explain how the disposal criteria were applied and the disposition of soils that exceeded the criteria. Soil that was treated to meet TCLP levels must still meet LDR treatment standards before disposal in the NIIWL.

Army Response: As explained in the discussion on the UTS for lead, the soil disposed in the NHWL met either the 5.0 mg/l lead TCLP standard for untreated soil or the alternate UTS of 7.5 mg/l for treated soil in accordance with the requirements of 40 CFR 268.49.

3. **Section 1.3.1, pg 7, Table 4:** The sentence preceding the table indicates soils were stabilized. Please clarify if treatment was performed in-situ or ex-situ and what treatment method was employed and whether TCLP was used to verify the criteria since for the metals listed the criteria correspond to the toxicity characteristic levels at 40 CFR 261.24. As noted above, soils that are excavated and exceed TCLP are considered RCRA hazardous waste. Such soils must meet RCRA LDR treatment standards in addition to being rendered non-hazardous through treatment before being disposed in a landfill (on-site or off-site). Add footnote to table to clarify if TCLP is used to measure criteria.

Army Response: Incinerated soil that exceeded 5.0 mg/l for lead by TCLP were stockpiled under plastic until all the explosive contaminated soil was incinerated and landfilled in the NIIWL cells 1 through 7. The stockpiled soil was then treated in a pug mill. Ten percent by weight cement kiln dust was added to the soil as it was fed into the pug mill. Water was added when necessary to yield a mix product with a moisture content range of 12 to 15% wet basis. Disposed soil met the RCRA LDR alternate treatment standards and the TCLP lead standard for non-hazardous waste. The soil was transferred to NHWL Cell 8 for disposal.

4. **Section 1.3.1, pg 11.** Bulleted items “*Nonhazardous waste landfill*”: Please indicate whether ADEM regulated the landfill under its RCRA Subtitle D program and whether a permit was issued. Also, please describe whether the landfill was constructed with a bottom liner and whether groundwater monitoring wells have been installed at the boundary of the unit to detect releases from buried wastes. As stated above, EPA believes a ROD should be issued to address the NWHL and describe a selected remedy.

Army Response: ADEM did not regulate the NIIWL under its RCRA Subtitle D program. A permit application was prepared but after approval it was determined that a permit was not required pursuant to 42 U.S.C. § 9621(e)(1). The NHWL was nonetheless closed in accordance with the requirements of the approved permit application. Army has details on the construction of NHWL Cell 8 that shows that there is a bottom liner in that cell. Army is reviewing its documents for construction details for cells 1 through 7. It is Army’s view that, regardless of whether such documents can be located, Army is entitled to the presumption of regularity. A separate ROD is not necessary as the NIIWL is included as a remedy component in the three IRODs and the final ROD for Area B soils.

Other Comments not related to the NHWL

The comments addressing your additional concerns not related to the NHWL are presented below with responses.

1. **Section 1.3.1, pg 11.** Bulleted items “*Asbestos Repository*”: The Asbestos Repository was constructed in 1974 with the destruction of the building located in that area. Asbestos was placed in the basement of the building and then covered with two feet of soil. Please indicate whether signs are posted that indicate it is used asbestos disposal as required by asbestos NESILAP regulations. EPA believes a ROD should be issued to address the Asbestos Repository and describe the selected remedy such that it can be included in the 5YR as requested by the State.

Army Response: Signs to be installed around the Asbestos Repository are in production.

2. **Section 1.3.1, pg 10-11.** Bulleted items “*Aniline Sludge Basin, (Study Area 9) EPA OUL*”: Please specify if remedial actions in 1999 were conducted under CERCLA and date of ROD or IROD. Also, specify level of residual contamination and or whether confirmatory sampling was performed. Indicate whether contamination exceeds residential use or industrial use levels.

Army Response: A copy of the report titled *Final Report Clean-Up of Coal Tar: Aniline Sludge Basin at ALAP* dated October 6, 1999 prepared by ECC is at the BRAC Office. According to the report, the object of the cleanup was to remove the coal tar from the bottom of the basin and haul it to an offsite RCRA subtitle D landfill, provide the necessary confirmation testing to demonstrate that the contaminated soils were removed, and restore the site to appropriate original condition. In addition, ECC transported and disposed of lead ingots that were stockpiled in building TC-4 in the approved RCRA Subtitle D landfill.

As part of the 1995 Supplemental Remedial Investigation, samples were collected from the sediment in the basin. The samples were analyzed for metals, explosives-related compounds, VOCs and SVOCs. Two metals, arsenic and molybdenum, were detected at concentrations that exceeded background concentrations. Neither of these metals was identified as a human health contaminant of concern. Both of the metals were identified as eco-COCs.

Of the samples that were collected directly from the coal tar, there were only some minor concentrations of iron, aluminum, and barium. All of these were below ADEM's TCLP regulatory levels.

Following excavation, samples were collected following a grid pattern in which a pattern of seventeen, 50 x 50 foot grid squares were laid out over the excavation area. Nineteen samples were collected and analyzed for TCLP metals, total metals, and SVOC's. The confirmation samples did not exceed ADEM's TCLP regulatory limit. In total 3,063 cubic yards of material were removed and taken to the Cedar Hills Landfill.

A hard copy of the report is available and a copy can be provided if required. Based on the analytical data, a contaminant cleanup was not required under CERCLA, but rather some housekeeping to remove the coal tar from the basin. The tar removal was a housekeeping activity and was not in response to the risk assessments. Because the top of the basin was sticky during the summer months, the stakeholders were concerned that birds and animals would stray onto the area and might get stuck to the tar.

3. **Section 1.3.1, pg 10-11.** Bulleted items "*Storage Battery and Debris Dump (Study Area 25), EPA OU7*": Please specify if remedial actions were conducted under CERCLA and date of ROD or IROD. Indicate whether the lead debris and contaminated soils were managed as RCRA hazardous waste and whether the Opelika landfill is a RCRA Subtitle C hazardous waste landfill. Also, specify level of residual contamination and or whether confirmatory sampling performed. Indicate whether contamination exceeds residential use or industrial use levels.

Language from Draft LUC-RD dated August 2012: Remediation of the Storage Battery and Debris Dump was performed by Bhate Environmental Associates, Inc. (Bhate). Remediation at Study Area 25 was achieved by the excavation and offsite disposal of approximately 156 tons of soils and the disposal of 4,638 pounds of battery casings and debris. Detected soil concentrations were compared against EPA Region 3 risk-based industrial screening levels (ISLs) for industrial sites. The ISLs for detected metals in soil samples prior to excavation and disposal are:

- Arsenic concentrations greater than 3.8 mg/kg
- Lead concentrations greater than 42 mg/kg (ISL from Alabama risk based corrective action [RBCA] for underground and storage tanks [USTs] in April 1998)

Signed manifests documented the transfer of 156.61 tons of soil from Study Area 25 to the Opelika Landfill in Opelika, Alabama. Battery demolition debris consisting of lead panel remnants were loaded into 55-gallon steel drums and transferred to an offsite recycling facility. Documentation showed 4,638 pounds of battery remnants were accepted by Beckman Metals Recycling of Cullman, Alabama. Details of the Study Area 25 remediation are provided in Area 25 Battery Demolition Debris, Red Water Basin and Sinkhole Repair (Bhate 2000).

Bhate (Bhate Environmental Associates, Inc.). 2000. Area 25 Battery Demolition Debris, Red Water Basin, and Sinkhole Repair – Former Alabama Army Ammunition Plant, Childersburg, Alabama. Prepared for U.S. Army Corps of Engineers, Mobile District Office, Mobile, Alabama, August.

Army Response: The OU7 ROD did not discuss the work done by Bhate. A FS was conducted in 2008 for Soil Sediment and Surface Water in Area B. Site 25 is discussed in the 2008 FS, the Human Health Risk Assessment and Eco-Risk Assessment were reviewed and no further action (NFA) was required for the site. The Army has found no documentation concerning whether the remedial work at Site 25 was conducted under CERCLA. The best recollection of the few remaining personnel that were involved in the project in 2000 is that the cleanup of the battery parts and the switches were conducted as a house keeping function and not part of the CERCLA work. No IROD or ROD has been found that was developed specifically for Site 25. The OU7

ROD indicated that no further action is required at the site and unrestricted land use for the site. Based on OU7 ROD, the CERCLA decision for the site is NFA.

A copy of the Bhate Report from 2000 should be available in the archive documents that are scheduled for scanning. Once this document is located more information on the storage battery site cleanup may be available.

4. **Section 1.3.1, pg 10-11.** Bulleted items "*TC4-A and B, EPA OU 1*": Please indicate the cleanup values for the soils in these areas. Also, specify if remedial actions conducted under CERCLA and what are the residual contamination levels. Specify if remaining contamination exceeds industrial or residential use levels.

Army Response: TC4-A and -B were prefabricated structures with slab on grade foundations that were used to store soil from Area A prior to it being treated in the onsite incinerator. There were no cleanup values for the soils in these areas. There were no remedial actions conducted in the area. There was no remaining contamination.

5. **Section 1.3.1, pg 11.** Bulleted items "*Utility Poles and PCB Transformers*": Please indicate what authority, CERCLA etc, was used to remove the fallen poles with transformers and the PCB contaminated soil. Indicate whether the PCB contaminated soil exceeded 50ppm and had to be disposed of as TSCA PCB waste in a TSCA chemical waste landfill. Also, specify level of residual contamination since confirmatory sampling was performed. Indicate whether contamination exceeds residential use or industrial use levels.

The Downed Utility Pole with Transformers and Transformer Storage Buildings were classified as requiring no further action (NFA) in the OU7 ROD.

Language from the LUC-RD: "*Utility Poles with PCB Transformers*—A Community Environmental Response Facilitation Act (CERFA) investigation was conducted at ALAAP in April 1994 under the BRAC Environmental Restoration Program (ERP), as required by Public Laws 100-526 and 101-510 (TETC 1994). The associated report identified real property in Area B that could be immediately reused and redeveloped. The study also identified six additional areas with environmental concerns that were not considered during previous investigations. ...At various locations around Area B, downed power poles with stained earth were observed. Sampling of the stained earth was conducted as part of the Supplemental RI for ALAAP—Area B and revealed the presence of polychlorinated biphenyl (PCB)-contaminated soils (SAIC 2001a). The transformers had been removed during demolition operations. The contaminated soil was excavated and disposed of offsite. Confirmatory samples verified the results of the soil removal. No documentation about cleanup goals of utility poles with PCB transformers is available."

SAIC. 2001a. Supplemental RI Report—Remedial Investigation Feasibility Study. Alabama Army Ammunition Plant—Area B, Childersburg, Alabama. Prepared for the U.S. Army Corps of Engineers, Mobile District under Contract DAAA15-91-D-0017, Delivery Order No. DA12. Prepared by Science Applications International Corporation, Reston, Virginia. Final. August.

TETC (The Earth Technology Corporation). 1994. Community Environmental Response Facilitation Act (CERFA) Report. Alabama Army Ammunition Plant, Talladega County, Alabama. Prepared for the U.S. Army Environmental Center. April.

Information from the Supplemental RI Report by SAIC dated August 2001: ninety-five soil samples were collected and analyzed for PCBs and Metals. Three of the samples exceeded 50ppm PCBs. Sample SS-PO-047 was collected at the east side of the Bldg. 2240 South Transformer Storage Area. Aroclor 1260 was detected at 102 ppm. Samples SS-PO-094 and SS-PO-095 were collected south of Bldg. 717A, total Aroclors were 67.8 ppm and 106 ppm respectively in the Smokeless Powder Manufacturing Area.

Language from OU7 ROD: The visual survey conducted under CERFA identified 27 locations under and around utility poles with transformers where the soil was blackened and bare of vegetation (TECT 1994). None of the transformers had been tested for PCB contamination. With the exception of a utility pole near Building 227D in the Smokeless Powder Manufacturing Area (Study Area 2), all locations are in the GSA Area. Each location was assigned a site number corresponding to the closest building, as follows:

- 708A – Three utility poles on the north side
- 703E – Two utility poles on the northwest portion
- 703A – Two utility poles on the southwest and one on the southeast portion
- 2240 – Eight utility poles on the south side
- 2170 – One utility pole on the southeast and two on the south side
- 704Y – Three utility poles on the north side
- 717A – Two utility poles on the northeast and one on the southwest portion
- 715A – One utility pole on the southeast portion
- 227D – One utility pole on the north side (in the Smokeless Powder Manufacturing Area)

A Supplemental RI and baseline risk assessment conducted in 1996 identified PCBs in soils as COCs based on protection of human health and the environment. During the Supplemental RI, surface soil samples were collected from each of the 27 utility pole areas. Risks for the residential land use scenario exceeded one or more risk targets (SAIC 2001). The soils surrounding the utility poles were excavated and disposed of in September and October 1999 (USACE 1999), but available documents do not provide the volume of soil that was remediated. Since soil remediation has been completed, no threats to human health or the environment exist for unrestricted land use. Therefore, NFA is required for this study area.

SAIC. 2001. Supplemental RI Report – Remedial Investigation Feasibility Study. Alabama Army Ammunition Plant – Area B, Childersburg, Alabama. Prepared for the U.S. Army Corps of Engineers, Mobile District under contract DAAA15-91-D-0017, delivery order number DA12. Prepared by Science Applications International Corporation, Reston, Virginia. Final. August.

USACE (U.S. Army Corps of Engineers). 1999. Alabama Army Ammunition Plant Remedial Actions. Partnering Conference Presentation by Ken Gray, February 16.

Army Response: The OU7 ROD indicates that the CERCLA decision for the Utility Poles with PCB Transformer site is NFA required. The best recollection of the few personnel remaining on the project that were working at the site at the time is that the cleanup of the contaminated soil would not have been a CERCLA effort, but more of a house keeping activity. A 1999 document entitled *Final Report PCB Clean-Up at ALAAP* dated November 1999 prepared by EEC should be available in the archive documents that are scheduled for scanning. Once this document is located more information on the PCB cleanup may be available. The Army assumes that the contaminated soil from the site was handled appropriately; additional information may come to light as historical documents become more easily accessible after scanning.

Implementation of the LUCIP

Below are Army Responses to EPA LUCIP comments, EPA responses to Army responses and Army latest responses to EPA responses.

1. Army's Response to Comment 26, 26A

The LUCIP clearly designates the locations on the "No Fishing" signs at Study Areas 21 and 26. The "No Fishing" signs are placed along the entire length of the Study Areas. The referenced RTC states that the discussion regarding the home range of the fish was inappropriate for a LUCIP and that discussion is not included.

EPA Response: Locations of a LUC are based on where a potential for exposure exists and are not limited by site boundaries. Without evaluating the ecological receptors home range along with their location on the site, the Army does not know whether the site boundary, as marked in the LUCIP, controls the risk. It is not clear whether the potential for a receptor to migrate beyond the site boundary has been evaluated, nor whether the potential for predators of the receptor to feed on the site. EPA cannot agree to placement of signage at the site boundary without adequate justification.

Army Response: Clarification. The LUC of postings to discourage fish consumption is a highly conservative approach to a human health risk that is already highly overestimated. The contaminated sediments from both ditches have been remediated. In the present setting, fishing in the water bodies that are proposed for posting would be undesirable because: 1) the ditches creeks are frequently dry and therefore provide poor or no habitat for fish; 2) the banks and surrounding terrain is thickly vegetated, making fishing difficult; and 3) water moccasins are ubiquitous along the ditches creeks, especially near portions that contain water, diminishing the chance that a person would attempt to fish. Furthermore, ample opportunity for better fishing exists within a couple of miles of ALAAP. The postings were recommended for a future hypothetical setting in which clearing of vegetation provided better access to any water-filled stretches of ALAAP water bodies and less desirable habitat for moccasins. Postings would be located along all stretches that could potentially be fished.

With regard to home range and as described above, water levels within ALAAP water bodies are highly variable and dependent upon precipitation. During dry periods, the ditches creeks may be dry or flow only intermittently. This condition strongly limits both the size of fish that may exist

and the range over which they may travel. Small golden shiners, blue gill, and various species of sunfish, (e.g., green sunfish); have been found in the Red Water Ditch and Crossover Ditch (SAIC Supplemental RI Report 2001). Gerking (1953) has published that the majority of green sunfish have small home ranges from 100 to 200 feet. There are other studies that confirm this rather sedentary habit of small stream fish. Thus, the fish at ALAAP are not expected to move very much up and down the ditches. It is thought unlikely that fish large enough to be caught and kept for consumption following legal fishing limits in Alabama navigate off ALAAP to present a risk to human health by being caught in adjacent water bodies for consumption. Leidos' ecologist returned to the site in 2013 to confirm previous assessments and found conditions track with previous conclusions: fishing conditions are still poor on the site; the fish in the ditch are too small to be caught for food by angling. It is thought unlikely that fish leave the site in search of food or that predators would come on the site in search of prey species. Predatory fish would not exclusively hunt in the ditches and therefore their diet would be blended with prey outside the ditches which would dilute any contaminant build up in their tissues. No study of fish movement out of or into the ditches has been conducted.

Fish tissue samples, which gave rise to concern, were collected from water bodies' interior to ALAAP. It should be noted that fillet samples could not be collected from the Red Water Ditch due to an absence of fish large enough to provide such a sample. Samples generally were prepared as composites of small species or small individuals. In the human health risk assessment, resident and recreational children and adults were assumed to eat 0.03 kg of ALAAP fish per day for 120 days per year. This is approximately equal to 1 meal (8 oz. meals) per week for approximately four months of the year. This is unrealistic for the Red Water Ditch and the Crossover Ditch based on the size and quantity of fish present and is part of the reason why the risks are considered overestimates. The warnings proposed for this LUC would be monitored by inspections of posted signs.

2. Army's Response to Comment 33

Section III.C of the Environmental Protection Provisions attached to the Quitclaim Deed as "Exhibit C" requires that a soil excavation plan be provided to EPA and Army for their approval prior to conduct of any excavation. If disposition of the soil is not satisfactory to EPA, then EPA may require satisfactory revisions to the plan prior to EPA's approval. The same is true with respect to Army's requirements.

EPA's Response: Any and all requirements, to the extent possible, need to be placed in the LUCIP document such that all parties and those not versed in the detail of the site or the agreement have a clear indication of the requirements for site use. A prospective purchaser of the property may base a purchase price on their ability to move soil to any location and find later that that is not possible. In addition, future implementers of the LUCIP may not be as familiar with the site and may inadvertently approve soil movement to uncontaminated portions of the property without clear indication in the LUCIP. To the extent possible, the LUCIP needs to be written to prevent potential exposures and do so with as much transparency, as possible.

Army Response: As a LUC implementation activity, an addendum will be added to the existing Final LUCIP for ALAAP Area B and reviewed by stakeholders to formalize procedures for onsite movement or off-site disposal or reuse of soil that may be contaminated with explosives-

related compounds and/or lead. This addendum will be added to the existing copies of the document without the need to reissue the document.

Please contact the undersigned if you have any question on these matters.

Sincerely,

VAN
DYKE.ANDREW.L.12007
86714

Digitally signed by VAN
DYKE.ANDREW.L.1200786714
DN: c=US, o=U.S. Government, ou=DoD,
ou=PKI, ou=USA, cn=VAN
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Date: 2014.05.20 10:40:31 -04'00'

Andrew Van Dyke
Program Manager
Army BRAC Office

cc: Adam Warnke, ADEM
Martha Brock, EPA Region 4
David Minvielle, Army ELD
Ann Wright, Army OGC
Melissa Shirley, USACE
Bill Millar, CALIBRE
file

ATTACHMENT A

Excerpts from: "EPA Superfund Record of Decision, Alabama Army Ammunition Plant, EPA ID: AL6210020008, OU 01, Childersburg, AL." (12/31/1991) (emphasis added)

DECLARATION OF THE RECORD OF DECISION

...

DESCRIPTION OF THE SELECTED REMEDY

The Stockpile Soils Area Operable Unit addresses the principal threats from explosives, lead, and asbestos containing material posed by the Stockpile Soils at the Alabama Army Ammunition Plant. The Stockpile Soils Area Operable Unit consists of soil stockpiled in a covered building and on a concrete slab covered with an impermeable membrane. The scope of the ROD is limited to the Stockpile Soils Area Operable Unit.

The selected Remedy for the Stockpile Soils Area Operable Unit consists of the following:

- On-Facility Thermal Treatment of Stockpile Soils
- On-Facility Disposal of Treated Soil
- On- or Off-Facility Disposal of Asbestos-Containing Material

...

7.2 Alternative 2 - On-Facility Thermal Treatment and On-Facility Disposal of Treated Soil - On or Off-Facility Disposal of Asbestos-Containing Material

In Alternative 2, soil will be separated from the asbestos containing material. Soil will be transported to the on-facility thermal treatment unit for incineration. Treated material will be analyzed for explosives and lead to verify compliance with the treatment criteria as described in "Remediation Goals", in Section 9.1. The explosives will be destroyed during the incineration process. **If lead concentrations in the treated soil or fly ash exceed the allowable regulatory standards, that material will be stabilized in compliance with Land Disposal Restrictions. Treated soil and stabilized material will be placed at the on-facility designated backfill area at AAAP.** The on-facility incinerator will be removed upon completion of the project.

Asbestos-containing material will be containerized and transported to an on-or off-facility disposal facility that meets the technical standards for asbestos disposal. The quantity of material to be disposed of and the availability of disposal facilities will determine whether on- or off-facility disposal of the asbestos-containing material will be used.

Excerpt from: "EPA Superfund Record of Decision: Alabama Army Ammunition Plant, EPA ID: AL6210020008, OU 02, Childersburg, AL" (11/15/1994) (emphasis added)

DECLARATION OF THE FINAL INTERIM RECORD OF DECISION

...

DESCRIPTION OF THE SELECTED REMEDY

...

The selected remedy for the Area B Soils Operable Unit consists of the following:

(A) Soils and Sediments (Study Areas 6, 7, and 21)

- Clear, survey, and grid areas; perform soil and sediment sampling and analysis to delineate contamination by explosives (TNT, 1,3-dinitrobenzene, and tetryl) and lead.
- For contaminated areas: excavate soils and sediments until excavation criteria are satisfied; screen materials; transport materials to the transportable incineration system (TIS-20) site in Area B; **treat materials by incineration and/or stabilization until treatment and disposal criteria are satisfied.**
- Decontaminate oversize materials by crushing or shredding and treatment in the TIS-20, or by high-pressure water washing and disposal in the backfill area.
- Expand the existing on-site disposal area for final placement of treated materials.
- Backfill excavated areas in Study Areas 6 and 7 and rough grade to pre-excavated contours; backfill Study Area 21 to the elevation of surrounding banks of the Red Water Ditch.
- **Close the disposal area in accordance with the existing approved permit application for treated soils ("Treated Soils - Backfill Area Permit Application for the Alabama Army Ammunition Plant Stockpile Soils Area Operable Unit", March 1993).**

Excerpt from: "EPA Superfund Record of Decision: Alabama Army Ammunition Plant, EPA ID: AL6210020008, OU 06, Childersburg, AL" (03/27/1997) (emphasis added)

DECLARATION OF THE INTERIM RECORD OF DECISION

...

DESCRIPTION OF THE SELECTED REMEDY

...

The selected remedy for the Area B Soils Operable Unit IV consists of the following:

- Clear, survey, and grid areas; perform soil and sediment sampling and chemical analysis to delineate explosives and metals contamination.
- Use Ground Penetrating Radar (GPR) or test pits to locate suspected burning trenches in Study Areas 16 and 19.
- For contaminated areas (except Study Area 22): excavate soils until excavation criteria are satisfied; transport materials to the TIS-20 site in Area B: **treat materials by incineration and/or stabilization until treatment and disposal criteria are satisfied**; dispose treated material in the on-site backfill area. Study Area 22 will be addressed using an engineered landfill in accordance with the remedial option identified in the Draft Final Feasibility Study Report dated March 1996, prepared by Science Applications International Corporation.
- If necessary, expand the existing on-site disposal area for final placement of treated materials.
- Decontaminate oversize materials by crushing or shredding and treatment in the TIS-20 or by high-pressure water washing; dispose in the backfill area.
- Treat contaminated process, sampling, and decontamination wastewaters in the TIS-20 aqueous waste treatment system; reuse water for site dust control and process makeup.
- Conduct confirmatory soil and sediment sampling and chemical analysis to ensure that excavation criteria have been satisfied.
- Backfill excavated areas in with uncontaminated borrow soils and rough grade to pre-excavated contours.
- **Close the on-site disposal area in accordance with the existing approved permit applications for treated soils ("Treated Soils - Backfill Area Permit Application for the Alabama Army Ammunition Plant", March 1994 and November 1994).**

ATTACHMENT B

ALAAP NHWL Cell 8 Data

Taken from Environmental Chemical Corporation Final Report Stabilization of
Incinerator Treated Soil and Fly Ash and Excavated Soil from Study Area 14, 16, & 19
January 1999

Attachment B - ALAAP

NHVL Cell 8 Data

Taken from Environmental Chemical Corporation -- Final Report -- Stabilization of Incinerator Treated Soil and Fly Ash and Excavated Soil from Study Area 14, 16, & 19 ALAAP

Jan-99

Taken from Appendix F -- Analytical Results

Total Lead EPA 6010B Stockpiled Soil Results

Lab ID	Customer Sample No	Matrix	Location	Reporting Limit mg/kg	Value mg/kg	Percent Solids	Comments	Date Received	Date Analyzed
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26849-003	0820-Cell8-STKPL	Soil	N/A	3.8	23	100		8/21/1998	8/26/1998
26895-005	0827-TC4-BLDG	Soil	N/A	3.9	46	100		8/28/1998	8/29/1998
26895-006	0827-CON-PAD	Soil	N/A	3.8	30	100		8/28/1998	8/29/1998
26978-005	0909-NVW-COMP	Soil	N/A	4.0	87	100		9/10/1998	9/12/1998
26978-006	0909-SW-COMP	Soil	N/A	3.8	90	100		9/10/1998	9/12/1998
26978-007	0909-NE-COMP	Soil	N/A	4.0	641	100		9/10/1998	9/12/1998
26978-008	0909-SE-COMP	Soil	N/A	3.8	64	100		9/10/1998	9/12/1998
26978-007	0909-NE-Comp	Soil	N/A	4.0	105	100	See 26978-008	9/10/1998	9/16/1998

TCLP Metals EPA 6010A After Treatment in Pugmill

Lab ID	Customer Sample No.	Arsenic			Lead			Date Sampled	Date Received	Date Analyzed
		Reporting Limit mg/L	Value mg/L	Flag	Reporting Limit mg/L	Value mg/L	Flag			
26626-001	0722-L2-T17	0.050	---	U	0.040	---	U	7/22/1998	7/23/1998	7/28/1998
26626-002	0722-L2-CE	0.050	---	U	0.040	0.09		7/22/1998	7/23/1998	7/28/1998
26626-003	0722-L1-CA	0.050	---	U	0.040	---	U	7/22/1998	7/23/1998	7/28/1998
26626-004	0722-L1-19	0.050	---	U	0.040	---	U	7/22/1998	7/23/1998	7/28/1998
26642-001	0723-L3-T17	0.050	---	U	0.040	---	U	7/23/1998	7/24/1998	7/28/1998
26642-002	0723-L3-CB	0.050	---	U	0.040	---	U	7/23/1998	7/24/1998	7/28/1998
26642-003	0723-L4-T19	0.050	---	U	0.040	---	U	7/23/1998	7/24/1998	7/28/1998
26642-004	0723-L4-CE	0.050	---	U	0.040	---	U	7/23/1998	7/24/1998	7/28/1998
26658-001	0727-L5-T19	0.050	---	U	0.040	0.043		7/27/1998	7/28/1998	7/30/1998
26658-002	0727-L5-CF	0.050	---	U	0.040	0.066		7/27/1998	7/28/1998	7/30/1998
26667-001	0728-L6-T17	0.050	---	U	0.040	0.11		7/28/1998	7/29/1998	8/1/1998
26667-002	0728-L6-CF	0.050	---	U	0.040	---	U	7/28/1998	7/29/1998	8/1/1998
26667-003	0728-L7-T19	0.050	---	U	0.040	0.16		7/28/1998	7/29/1998	8/1/1998
26667-004	0728-L7-CC	0.050	---	U	0.040	0.059		7/28/1998	7/29/1998	8/1/1998
26667-005	0728-L8-T19	0.050	---	U	0.040	0.43		7/28/1998	7/29/1998	8/1/1998
26667-006	0728-L8-CD	0.050	---	U	0.040	0.13		7/28/1998	7/29/1998	8/1/1998
26678-001	0729-L9-T19	0.050	---	U	0.040	0.11		7/29/1998	7/30/1998	8/3/1998
26678-002	0729-L9-CG	0.050	---	U	0.040	0.49		7/29/1998	7/30/1998	8/3/1998
26690-001	0730-L10-T19	0.050	---	U	0.040	0.065		7/30/1998	7/31/1998	8/4/1998
26690-002	0730-L10-CG	0.050	---	U	0.040	0.12		7/30/1998	7/31/1998	8/4/1998
26690-003	0730-L11-T17	0.050	---	U	0.040	0.078		7/30/1998	7/31/1998	8/4/1998
26690-004	0730-L11-CH	0.050	---	U	0.040	---	U	7/30/1998	7/31/1998	8/4/1998
26690-005	0730-L12-T17	0.050	---	U	0.040	---	U	7/30/1998	7/31/1998	8/4/1998
26690-006	0730-L12-CK	0.050	---	U	0.040	0.10	U	7/30/1998	7/31/1998	8/4/1998

TCLP Metals EPA 6010A

Lab ID	Customer Sample No.	Arsenic		Flag	Lead		Flag	Date Sampled	Date Received	Date Analyzed
		Reporting Limit mg/L	Value mg/L		Reporting Limit mg/L	Value mg/L				
26710-001	0803-L13-T8	0.050	0.11		0.040	---	U	8/3/1998	8/4/1998	8/8/1998
26710-002	0803-L13-CK	0.050	---	U	0.040	0.064		8/3/1998	8/4/1998	8/8/1998
26710-003	0803-L14-T17	0.050	---	U	0.040	0.10		8/3/1998	8/4/1998	8/8/1998
26710-004	0803-L14-CL	0.050	0.092		0.040	0.14		8/3/1998	8/4/1998	8/8/1998
26710-005	0803-L15-T19	0.050	0.11		0.040	0.47		8/3/1998	8/4/1998	8/8/1998
26710-006	0803-L15-CJ	0.050	0.99		0.040	0.32		8/3/1998	8/4/1998	8/8/1998
26724-001	0804-L16-T19	0.050	---	U	0.040	0.24		8/4/1998	8/5/1998	8/8/1998
26724-002	0804-L16-CJ	0.050	0.11		0.040	0.60		8/4/1998	8/5/1998	8/8/1998
26724-003	0804-L17-T19	0.050	0.13		0.040	0.39		8/4/1998	8/5/1998	8/8/1998
26724-004	0804-L17-CI	0.050	0.054		0.040	0.53		8/4/1998	8/5/1998	8/8/1998
26732-001	0804-L18-T19	0.050	---	U	0.040	4.60		8/5/1998	8/6/1998	8/14/1998
26732-002	0804-L18-CI	0.050	---	U	0.040	---	U	8/5/1998	8/6/1998	8/7/1998
26732-003	0804-L19-T19	0.050	---	U	0.040	0.41		8/5/1998	8/6/1998	8/7/1998
26732-004	0804-L19-CL	0.050	---	U	0.040	---	U	8/5/1998	8/6/1998	8/7/1998
26739-001	0806-L20-T14	0.050	0.074		0.040	---	U	8/6/1998	8/7/1998	8/8/1998
26739-002	0806-L20-CH	0.050	---	U	0.040	---	U	8/6/1998	8/7/1998	8/8/1998
26739-003	0806-L20-T17	0.050	0.089		0.040	---	U	8/6/1998	8/7/1998	8/8/1998
26739-004	0806-L20-CK	0.050	---	U	0.040	---	U	8/6/1998	8/7/1998	8/8/1998
26762-001	0810-L22-T19	0.050	---	U	0.040	0.29		8/10/1998	8/11/1998	8/12/1998
26762-002	0810-L22-CG	0.050	---	U	0.040	---	U	8/10/1998	8/11/1998	8/12/1998
26762-003	0810-L23-T19	0.050	---	U	0.040	---	U	8/10/1998	8/11/1998	8/12/1998
26762-004	0810-L23-CJ	0.050	---	U	0.040	0.047		8/10/1998	8/11/1998	8/12/1998
26771-001	0811-L24-T17	0.050	---	U	0.040	0.28		8/11/1998	8/12/1998	8/13/1998
26771-002	0811-L24-CJ	0.050	---	U	0.040	0.30		8/11/1998	8/12/1998	8/13/1998
26771-003	0811-L25-T19	0.050	---	U	0.040	0.79		8/11/1998	8/12/1998	8/13/1998
26771-004	0811-L25-CF	0.050	---	U	0.040	2.5		8/11/1998	8/12/1998	8/13/1998
26796-001	0813-L26-CF	0.050	---	U	0.040	0.59		8/13/1998	8/14/1998	8/16/1998
26796-002	0813-L26-TK10	0.050	---	U	0.040	1.3		8/13/1998	8/14/1998	8/18/1998
26836-001	0818-L27-CD	0.050	---	U	0.040	0.11		8/18/1998	8/20/1998	8/21/1998
26836-002	0818-L27-TK8	0.050	---	U	0.040	0.13		8/18/1998	8/20/1998	8/21/1998
26836-003	0818-L28-CC	0.050	---	U	0.040	0.068		8/19/1998	8/20/1998	8/21/1998
26836-004	0818-L28-TK13	0.050	---	U	0.040	0.069		8/19/1998	8/20/1998	8/21/1998
26848-001	0820-L29CB	0.050	---	U	0.040	0.072		8/18/1998	8/21/1998	8/22/1998
26848-002	0820-L28-TK26	0.050	---	U	0.040	---	U	8/18/1998	8/21/1998	8/22/1998
26866-001	0824-L30-CJ	0.050	---	U	0.040	0.081		8/24/1998	8/25/1998	8/26/1998
26866-002	0824-L30-TK19	0.050	---	U	0.040	---	U	8/24/1998	8/25/1998	8/26/1998
26866-003	0824-L31-CI	0.050	---	U	0.040	0.11		8/24/1998	8/25/1998	8/26/1998
26866-004	0824-L31-TK17	0.050	---	U	0.040	0.11		8/24/1998	8/25/1998	8/26/1998
26866-005	0824-L32-CE	0.050	---	U	0.040	0.060		8/24/1998	8/25/1998	8/26/1998
26866-006	0824-L32-TK19	0.050	---	U	0.040	0.25		8/24/1998	8/25/1998	8/26/1998

TCLP Metals EPA 6010A

Lab ID	Customer Sample No.	Arsenic		Flag	Lead		Flag	Date Sampled	Date Received	Date Analyzed
		Reporting Limit mg/L	Value mg/L		Reporting Limit mg/L	Value mg/L				
26887-001	0825-L33-CC	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-002	0825-L33-CCQA	0.050	---	U	0.040	0.17		8/25/1998	8/27/1998	8/29/1998
26887-003	0825-L33-TK5	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-004	0825-L33-TK5QA	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-005	0825-L34-CB	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-006	0825-L34-CBQA	0.050	---	U	0.040	0.24		8/25/1998	8/27/1998	8/29/1998
26887-007	0825-L34-TK17	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-008	0825-L34-TK17QA	0.050	0.059		0.040	0.18		8/25/1998	8/27/1998	8/29/1998
26887-009	0825-L35-CF	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-010	0825-L35-CFQA	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-011	0825-L35-TK10	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-012	0825-L35-TK10QA	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-013	0825-L36-CA	0.050	---	U	0.040	0.14		8/26/1998	8/27/1998	8/29/1998
26887-014	0825-L36-CAQA	0.050	---	U	0.040	---	U	8/26/1998	8/27/1998	8/29/1998
26887-015	0825-L36-TK3	0.050	---	U	0.040	0.18		8/26/1998	8/27/1998	8/29/1998
26887-016	0825-L36-TK3QA	0.050	---	U	0.040	0.090		8/26/1998	8/27/1998	8/29/1998
26895-001	0827-L37-CE	0.050	---	U	0.040	0.18		8/27/1998	8/28/1998	8/30/1998
26895-002	0827-L37-CEQA	0.050	---	U	0.040	0.78		8/27/1998	8/28/1998	8/30/1998
26895-003	0827-L37-TK6	0.050	---	U	0.040	0.042		8/27/1998	8/28/1998	8/30/1998
26895-004	0827-L37-TK6QA	0.050	---	U	0.040	1.5		8/27/1998	8/28/1998	8/30/1998
26895-007	0827-L38-CL	0.050	---	U	0.040	0.047		8/27/1998	8/28/1998	8/30/1998
26895-008	0827-L38-TK15	0.050	---	U	0.040	0.23		8/27/1998	8/28/1998	8/30/1998
26907-001	0828-L39-COMP	0.050	---	U	0.040	0.082		8/28/1998	8/31/1998	9/2/1998
26907-002	0828-L39-COMPQA	0.050	---	U	0.040	---	U	8/28/1998	8/31/1998	9/2/1998
26907-003	0828-L39-TK5	0.050	---	U	0.040	---	U	8/28/1998	8/31/1998	9/2/1998
26907-004	0828-L39-TK5QA	0.050	---	U	0.040	---	U	8/28/1998	8/31/1998	9/2/1998
26913-001	0831-L40-C40	0.050	---	U	0.040	0.047		8/31/1998	9/1/1998	9/3/1998
26913-002	0831-L40-C40QA	0.050	---	U	0.040	0.11		8/31/1998	9/1/1998	9/3/1998
26913-003	0831-L40-TK13	0.050	---	U	0.040	1.1		8/31/1998	9/1/1998	9/3/1998
26913-004	0831-L40-TK13QA	0.050	---	U	0.040	0.062		8/31/1998	9/1/1998	9/3/1998
26913-005	0831-L41-C41	0.050	---	U	0.040	0.28		8/31/1998	9/1/1998	9/3/1998
26913-006	0831-L41-C41QA	0.050	---	U	0.040	0.080		8/31/1998	9/1/1998	9/3/1998
26913-007	0831-L41-TK14	0.050	0.13		0.040	0.17		8/31/1998	9/1/1998	9/3/1998
26913-008	0831-L41-TK14QA	0.050	---	U	0.040	0.25		8/31/1998	9/1/1998	9/3/1998
26918-001	0901-L42-C42	0.050	---	U	0.040	0.042		9/1/1998	9/2/1998	9/3/1998
26918-002	0901-L42-C42QA	0.050	---	U	0.040	0.34		9/1/1998	9/2/1998	9/3/1998
26918-003	0901-L42-TK20	0.050	---	U	0.040	0.046		9/1/1998	9/2/1998	9/3/1998
26918-004	0901-L42-TK20QA	0.050	---	U	0.040	0.041		9/1/1998	9/2/1998	9/3/1998
26918-005	0901-L43-L43	0.050	---	U	0.040	0.054		9/1/1998	9/2/1998	9/3/1998
26918-006	0901-L43-L43QA	0.050	---	U	0.040	0.11		9/1/1998	9/2/1998	9/3/1998
26918-007	0901-L43-TK7	0.050	---	U	0.040	0.056		9/1/1998	9/2/1998	9/3/1998
26918-008	0901-L43-TK7QA	0.050	0.052		0.040	0.077		9/1/1998	9/2/1998	9/3/1998
26932-001	0902 L 44 COMP	0.050	---	U	0.040	0.068		9/2/1998	9/3/1998	9/4/1998
26932-002	0902 L 44 COMP QA	0.050	---	U	0.040	---	U	9/2/1998	9/3/1998	9/4/1998
26932-003	0902 L 44 TK5	0.050	---	U	0.040	---	U	9/2/1998	9/3/1998	9/4/1998
26932-004	0902 L 44 TK5 QA	0.050	---	U	0.040	---	U	9/2/1998	9/3/1998	9/4/1998
26946-001	0903-L45-COMP	0.050	---	U	0.040	---	U	9/3/1998	9/4/1998	9/6/1998
26946-002	0903-L45-COMP-QA	0.050	---	U	0.040	0.30		9/3/1998	9/4/1998	9/6/1998
26946-003	0903-L45-TK	0.050	---	U	0.040	0.28		9/3/1998	9/4/1998	9/6/1998
26946-004	0903-L45-TK-QA	0.050	---	U	0.040	0.045		9/3/1998	9/4/1998	9/6/1998
26946-005	0903-L46-COMP	0.050	---	U	0.040	0.078		9/3/1998	9/4/1998	9/6/1998
26946-006	0903-L46-COMP-QA	0.050	---	U	0.040	0.063		9/3/1998	9/4/1998	9/6/1998
26946-007	0903-L46-TK	0.050	---	U	0.040	---	U	9/3/1998	9/4/1998	9/6/1998
26946-008	0903-L46-TK-QA	0.050	---	U	0.040	0.050		9/3/1998	9/4/1998	9/6/1998

TCLP Metals EPA 6010A

Lab ID	Customer Sample No.	Arsenic			Lead			Date Sampled	Date Received	Date Analyzed
		Reporting Limit mg/L	Value mg/L	Flag	Reporting Limit mg/L	Value mg/L	Flag			
26973-001	0908-L47-COMP	0.050	---	U	0.040	0.055		9/8/1998	9/9/1998	9/10/1998
26973-002	0908-L47-COMPQA	0.050	---	U	0.040	---	U	9/8/1998	9/9/1998	9/10/1998
26973-003	0908-L47-TK23	0.050	---	U	0.040	0.17		9/8/1998	9/9/1998	9/10/1998
26973-004	0908-L47-TK23QA	0.050	---	U	0.040	---	U	9/8/1998	9/9/1998	9/10/1998
26973-005	0908-L48-COMP	0.050	---	U	0.040	0.18		9/8/1998	9/9/1998	9/10/1998
26973-006	0908-L48-COMPQA	0.050	---	U	0.040	---	U	9/8/1998	9/9/1998	9/10/1998
26973-007	0908-L48-TK10	0.050	---	U	0.040	---	U	9/8/1998	9/9/1998	9/10/1998
26973-008	0908-L48-TK10QA	0.050	---	U	0.040	0.041		9/8/1998	9/9/1998	9/10/1998
26978-001	0909-L49-COMP	0.050	---	U	0.040	---	U	9/9/1998	9/10/1998	9/11/1998
26978-002	0909-L49-COMPQA	0.050	---	U	0.040	---	U	9/9/1998	9/10/1998	9/11/1998
26978-003	0909-L49-TK8	0.050	0.11		0.040	---	U	9/9/1998	9/10/1998	9/11/1998
26978-004	0909-L49-TK8QA	0.050	---	U	0.040	---	U	9/9/1998	9/10/1998	9/11/1998

ATTACHMENT B
FOURTH FIVE-YEAR REVIEW PUBLIC NOTICE



Reaching 364,000 Households Per Week
256-241-1900 256-299-2153 205-884-3400
1-866-989-0873

Anniston Star
Star Plus
Jacksonville News
Piedmont Journal
Cleburne News

The Daily Home
The St. Clair Times
Coosa Valley Advantage
Lakeside Magazine

CONSOLIDATED CLASSIFIED

012 PUBLIC NOTICES

HELP ELIMINATE CHILD ABUSE
 by reporting information day or night on confidential basis, as follows: Monday through Friday, 8 a.m. to 5 p.m., Department of Human Resources, Talladega, 256-761-6600 or 866-398-0905 Any hour day or night, Sheriff's Office, Talladega, 256-362-6117, Sylacauga 256-245-5121 or 256-249-3811.

PUBLIC NOTICE
 Talladega County participates in the National Flood Insurance Program. Any Development in a flood hazard area requires a permit. Development in a floodway is prohibited. For more information contact the Talladega County Highway Department at 256-761-2136.

After ALL These Years,



We are still your best source for Classifieds.

The Daily Home
 256-299-2153
 1-866-989-0873

020 BUSINESS OPPORTUNITY

TO THE BEST OF OUR KNOWLEDGE
 All of the ads in this column represent legitimate offerings, however **The Daily Home** does recommend that readers exercise normal business caution in responding to ads.

030 HELP WANTED

DONOR RELATIONS
 We need 10 motivated individuals for Our collection and billing departments!
 We offer a fun and fast paced environment with Unlimited earning potential Earn \$10-\$15 per hour to start!
 No Sales. No exp req. Paid training. B/C insurance available.
 F/T and P/T positions available with opportunities for advancement!
 Background check and High School Diploma or eqv. Req.
 Call Mr. Johnson 256-245-2994

DOUGLAS

Douglas Manufacturing located in Pell City, is accepting applications for an experienced accounting clerk/bookkeeper. Applicants should be organized, highly motivated, team oriented & able to work in a fast paced environment & have minimum of three (3) yrs experience. Apply in person at 300 Industrial Park Dr, or email your resume to: mleggett@douglasmanufacturing.com

030 HELP WANTED

Need Extra Income?
 Looking for dedicated people in the Pell City area. We have delivery routes in your area available now! Early morning hours. Bring your information to The Daily Home office at #6 Ft. Lashley Ave., Talladega, or call 256-362-1000.

Look in the CLASSIFIEDS for great deals!!!

e You can do better. HONDA
 Honda Manufacturing of Alabama

NOW HIRING!

Elwood Staffing is recruiting for manufacturing assignments at Honda Manufacturing of Alabama, LLC located in Lincoln, Alabama.

Base Pay Rates
 1st Shift - \$13.25 per hour
 2nd & 3rd Shift - \$13.91 per hour.
 Assignments require rotation of shifts every two weeks.

Apply online or contact the Elwood Staffing office below.

www.elwoodjobs.com
 115 Court St. North, Ste. A
 Talladega, AL 35160
 256.362.1953 EOE

elwood staffing
The better people, people.

030 HELP WANTED

HVAC Service Tech
 paid depending on experience
 256-223-2250

CDL-A Owner Operators.
 \$5,000 Sign-on Bonus! Weekends HOME! GREAT Weekly Pay! Flatbed. 1yr recent exp
 Ashley: 866-985-9480



Part Time Driver Wanted
 With Hazmat and Tank Endorsement.
 \$18.00 Per Hour
 Hauling Diesel Fuel
 J&M Tank
 jmtankjobs.com or Call Jeff Sandlin @ 256-245-3933

Private duty nursing jobs for LPN's & RN's available in surrounding areas.
 call 1-800-844-0195

TO THE BEST OF OUR KNOWLEDGE
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064 GARDEN PRODUCE

White field corn and okra
 Call 256-435-9066

074 MISC. FOR SALE

TO THE BEST OF OUR KNOWLEDGE
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086 WANTED TO BUY

Wanting to Buy:
 Comics and comic collections. 30 year collector looking to buy collectible comics. Please contact Robert at 256-310-0274

088 YARD SALES

ASHVILLE- Estate Sale, July 29th & 30th, 8a-3p, @ 145 Pike Hill Rd. Home & Garage full of items that need to be sold. Some old & some new!!

102 MOBILE HOME SALES

TO THE BEST OF OUR KNOWLEDGE
 All of the ads in this column represent legitimate offerings, however **The Daily Home** does recommend that readers exercise normal business caution in responding to ads.

110 ANIMALS

Happy Jack Onex: wound dressing repels flies and kills hatching larvae. Prevents infection. Promotes healing.
TALLADEGA COUNTY EXCHANGE
 (447-6560) (kennelvac.com)

136 FURNISHED APARTMENTS

1 Br, all utilities incl., plus cable, single or couple, No pets, 256-362-8080; 256-493-3909

Starting at \$500/mo. 1 BR, all utilities & cable. No pets! Call 256-493-3909

138 UNFURNISHED APARTMENTS

AUTUMN TRACE APARTMENTS
 Sylacauga, occasional vacancies
 NICE 1, 2 AND 3BR
 256-249-2126

138 UNFURNISHED APARTMENTS

Harrison Estates Apartments
 (205)814-1468

Free Water, Garbage, Sewage and Pest Control.
 1 & 2 Bedrooms. Pets Welcome! Managed by MRD Hwy 231 & 16th Ave. S Pell City
 www.mrdapartments.com

Pineview Landing Apts. in Talladega
 1, 2, & 3 occasional vacancies.
 Call (256) 362-3412.
 www.pineviewlanding.com

RIVERBEND WATERFRONT APTS.

1 Bedroom \$531⁰⁰
 2 Bedrooms \$563 to \$575
 3 Bedrooms \$647⁰⁰
 •Washer & dryer connections
 •Boat launch & piers
1-800-226-4404
205-884-4400
 Riverside

JUBILEE TOWNHOMES

Pell City, AL

NOW LEASING

3 Bedroom...\$675
 4 Bedroom...\$800
 Call 205-338-2253
 700 Jubilee Circle
 JubileeTown@gmail.com
 Equal Housing Opportunity

138 UNFURNISHED APARTMENTS

T'dega- 2 Apartments for rent
 on Patty Ln. 1 is Available August 1st the other one is Available September 1st, \$575/mo., \$500/dep. **Must be 1 year lease.** 256-649-0411.

WOODHILL APARTMENTS
 Special for 1&2 Bedroom Apartments. Now Leasing! 1br \$300/mo. & 2br \$350/mo. All electric, CH&A, carpet, and laundry on site. We temporarily can rent apartments to all persons without income restrictions. Call 256-245-5128

144 RESORTS RENTALS VACATIONS

Panama City Beach Beachside Condo, Thomas Dr. Balc. Kitchen, Pool, \$100/day + tax sleeps 4, 256-820-4319 or 256-591-5157, 256-310-5648

150 UNFURNISHED HOUSES

Talladega, 519 W. Street N. 2.5BR, 2BA for more info 256-493-4800.

164 HOMES

3br, 2ba, lg den, kit, liv rm 917 Scott St, Talladega SOLD AS IS \$38500 803-599-7705

T'Dega- 122 Morgan St. 2 blocks from hospital, 4 blocks from shopping strip. Upstairs, living room, dining room, 2BR, 1BA, kitchen, closed in deck (12x30), open deck (12x10). Great view. Downstairs: Mother-in-law apt., same as above. Corner lot w/ extra, fenced lot, enclosed garage. \$75,000. 205-491-6531 or 205-277-9668 (leave message)

PUBLIC NOTICE U.S. ARMY BASE REALIGNMENT AND CLOSURE DIVISION and the U.S. ENVIRONMENTAL PROTECTION AGENCY (USEPA) announce the former Alabama Army Ammunition Plant Superfund Site Five-Year Review

Public comment period: July 26 to August 24, 2017

The U. S. Army Base Realignment and Closure Division is conducting the fourth Five-Year Review (FYR) for the former Alabama Army Ammunition Plant (ALAAP) Superfund Site (i.e., the site). The objective of the review is to ensure the selected remedy for the site continues to protect human health and the environment.

The ALAAP facility was operated during World War II to produce nitrocellulose, single-base smokeless powder, and nitroaromatic explosives such as trinitrotoluene (TNT), dinitrotoluene (DNT), and tetryl. The site, located approximately 4 miles north of Childersburg, Alabama, on Alabama Highway 235, consists of approximately 2,235 acres of primarily undeveloped land and is commonly known as Area B. The site was listed on the National Priorities List (NPL) in July 1987 and has undergone numerous environmental investigations and site clean-ups. The Army transferred site ownership to the City of Childersburg in April 2003.

This FYR addresses Operable Unit (OU) 7 which encompasses all selected remedies at study areas within ALAAP – Area B. OU-7 consists of soil, surface water, and sediment from the following study areas:

- Study Area 2 - Smokeless Powder Facility
- Study Area 3 - Sanitary Landfill and Lead Facility
- Study Area 4 - Manhattan Project Area
- Study Area 7 - Northern TNT Manufacturing Area
- Study Area 8 - Acid/Organic Manufacturing Area
- Study Area 10W - Tetryl Manufacturing Area
- Study Area 16 - Flashing Ground
- Study Area 17 - Propellant Shipping Area
- Study Area 18 - Blending Tower Area
- Study Area 19 - Lead Facility
- Study Area 21 - Red Water Ditch
- Study Area 22 - Demolition Landfill
- Study Area 26 - Crossover Ditch
- Building 6 - Coke Oven
- South Georgia Road Dump

The selected remedy for the site includes land use controls. In addition, this FYR addresses remedial actions, including excavation, treatment, and disposal of contaminated soils and sediments at a number of study areas.

The FYR process includes review of data and new information, inspection of the sites, and community interviews. Completion of the current FYR is scheduled for September 2018.

The U. S. Army Base Realignment and Closure Division is seeking information from individuals familiar with the sites. As someone living in the vicinity, you may have information that can help the review team determine if the selected remedies are still protective. Some examples of the type of information that U. S. Army Base Realignment and Closure Division is interested in receiving include:

- Ways the selected remedy at the site is not protective of human health or the environment;
- Buildings or land around the site being used in new ways;
- Any unusual activities at the site, such as dumping, vandalism, or trespassing;
- Ways the selected remedy at the site has affected the area.

If you have information that might be helpful, please send it to:
U.S. Army Corps of Engineers
 Mobile District
 ATTN: EN-GE (Shirley)
 PO Box 2288
 Mobile, Alabama 36628,
 251-690-2616 or
 melissa.l.shirley@usace.army.mil

For additional information, historical documents may be reviewed at:
Local Document Repository
Earle A. Rainwater Memorial Library
 124 Ninth Ave SW
 Childersburg, Alabama 35044

MLS MIDWEST LOGISTICS SYSTEMS

Does Your Current Route Get You Home Daily? OURS DOES!

Local trucking company looking for Class A Drivers that want to be home daily. Must have 2 years experience and a clean MRV. We are also hiring Veterans who have military transportation experience.

We Offer The Following:

- Home Daily
- Dedicated Runs
- No Touch Freight
- Paid Holidays
- Paid Vacations
- Quarterly Bonus
- Excellent Benefits
- Newer Equipment
- Competitive Salaries
- Direct Deposit
- Paid Weekly

Benefits:

- Medical Insurance
- Vision Insurance
- Life Insurance
- 401(K) Retirement Plan with Matching Contributions
- Uniforms Provided
- Short & Long Term Disability

If you want to work for a company that is focused on employee satisfaction while also meeting customer expectations, apply today by calling...

Bert Foster
 567-644-3407
 or email:
 bfoster@midwestlogisticsystems.com

COME JOIN OUR WINNING TEAM!

NOW HIRING ALL POSITIONS

40 YEARS
 FORD F-SERIES
 AMERICA'S BEST SELLING TRUCKS

- Sales •Service •Office Staff
- Housekeeping •Delivery
- Detail/Clean Up
- Finance Service Assistant
- Technology Specialist

Apply In Person or at PellCityFord.com

TOWN & COUNTRY

"Experience Our Award Winning Attitude"
AlabamaFord.com

Pell City, AL
 1-20 • Exit 158 • Hwy 231
205-338-9463



Reaching 364,000 Households Per Week
256-241-1900 256-299-2153 205-884-3400
1-866-989-0873

Anniston Star
Star Plus
Jacksonville News
Piedmont Journal
Cleburne News

The Daily Home
The St. Clair Times
Coosa Valley Advantage
Lakeside Magazine

CONSOLIDATED CLASSIFIED

012 PUBLIC NOTICES

HELP ELIMINATE CHILD ABUSE
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PASS TIME WHILE WAITING.
READ THE CLASSIFIEDS.

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 Subscribe today and save off the newsstand price.
256-299-2153
1-866-989-0873

020 BUSINESS OPPORTUNITY

TO THE BEST OF OUR KNOWLEDGE
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030 HELP WANTED

A PLASTIC INJECTION MOLDING COMPANY in Leeds, AL, is accepting applications for machine operators, and other skilled positions with injection molding background. Looking for highly motivated and detail oriented people. Must be able to pass a drug screen/background check. Apply in person @ 8220 dunnavant rd, between hours of 9a-12p & 1p-3p, or send resume to: pgillard@epcmfg.com EOE M/F Vet/Disabled

DONOR RELATIONS
 We need 10 motivated individuals for Our collection and billing departments! We offer a fun and fast paced environment with Unlimited earning potential Earn \$10-\$15 per hour to start! No Sales. No exp req. Paid training. B/C insurance available. F/T and P/T positions available with opportunities for advancement! Background check and High School Diploma or eqv. Req. Call Mr. Johnson 256-245-2994

Hiring Drivers
 Taking Applications for Concrete Mixer Drivers and Dump Truck Drivers All applicants must have a valid drivers license and clean MVR. Truck drivers must have a CDL either Class A or Class B. Minimum of 1 yrs experience required. Local hauling. Home every night. Apply in person at: Waites Concrete & Construction 210 Stephen J. White Memorial Blvd., Talladega, AL. 35160 Office hours are 9:00am-3:00pm Monday thru Friday EOE

Muffler Installer needed Welding & Mechanic experience necessary. Call Robert at Oxford Muffler 256-831-4392 between 8am & 5pm

030 HELP WANTED

HVAC Service Tech
 paid depending on experience 256-223-2250

Need Extra Income?
 Looking for dedicated people in the Pell City area. We have delivery routes in your area available now! Early morning hours. Bring your information to The Daily Home office at #6 Ft. Lashley Ave., Talladega, or call 256-362-1000.



Now Hiring!
 Elwood Staffing is recruiting for manufacturing assignments at Honda Manufacturing of Alabama, LLC located in Lincoln, Alabama.

Base Pay Rates
 1st Shift - \$13.25 per hour
 2nd & 3rd Shift - \$13.91 per hour. Assignments require rotation of shifts every two weeks.

Apply online or contact the Elwood Staffing office below.
 www.elwoodjobs.com
 115 Court St. North, Ste. A Talladega, AL 35160
 256.362.1953 EOE

elwood staffing
The better people, people.



Part Time Driver Wanted
 With Hazmat and Tank Endorsement. \$18.00 Per Hour Hauling Diesel Fuel J&M Tank

jmtankjobs.com or Call Jeff Sandlin @ 256-245-3933

030 HELP WANTED

City of Sylacauga has an immediate opening for part time Firefighters. High School/G.E.D. required. Valid State Driver's License required. Current certification as a Firefighter from Alabama Fire College. Must submit to background checks, pre-employment and random drug screens, physical and psychological testing. MF/VD/EOE

TO THE BEST OF OUR KNOWLEDGE
 All of the ads in this column represent legitimate offerings, however **The Daily Home** does recommend that readers exercise normal business caution in responding to ads.

064 GARDEN PRODUCE

White field corn and okra
 Call 256-435-9066

074 MISC. FOR SALE

Propane Tank 500 Gal. Valued at \$1,200, sacrifice for \$750. Good condition. Call 256-362-9300 or 509-654-6931.

TO THE BEST OF OUR KNOWLEDGE
 All of the ads in this column represent legitimate offerings, however **The Daily Home** does recommend that readers exercise normal business caution in responding to ads.

086 WANTED TO BUY

Wanting to Buy:
 Comics and comic collections. 30 year collector looking to buy collectible comics. Please contact Robert at 256-310-0274

088 YARD SALES

PC- 70 Sage Dr. (Morning-side Sub) Thurs, Aug 3rd, Fri, Aug 4th, Sat, Aug 5th, 8a-4p.

PC- Estate Sale Fri, Aug 4th, 8a-3p, & Sat, Aug 5th, 8a-12, 1p-4p half price, @ 201 Country Lane. Furn, hh items, women's clothes, tools, outdoor items, w/d, lots of misc

Sylacauga/Waco- Thurs., Aug. 3rd, Fri., Aug. 4th & Sat. Aug. 5th. from 8-12 at 207 Pine St., Estate Sale, cash only.

PART-TIME CUSTOMER SERVICE REPRESENTATIVE
 The Talladega County Commission is currently recruiting for a **Part-Time Customer Service Representative I** for the Revenue Dept. Application, job description and required qualifications are available at the **Talladega Career Center located at 1005 South Street East, Talladega or online at www.talladegacountyal.org.** Deadline: Close of business on Friday, August 4, 2017.
 AN EQUAL OPPORTUNITY EMPLOYER

MLS MIDWEST LOGISTICS SYSTEMS
Does Your Current Route Get You Home Daily? OURS DOES!
 Local trucking company looking for Class A Drivers that want to be home daily. Must have 2 years experience and a clean MVR. We are also hiring Veterans who have military transportation experience.

We Offer The Following:

- Home Daily
- Dedicated Runs
- No Touch Freight
- Paid Holidays
- Paid Vacations
- Quarterly Bonus
- Excellent Benefits
- Newer Equipment
- Competitive Salaries
- Direct Deposit
- Paid Weekly

Benefits:

- Medical Insurance
- Vision Insurance
- Uniforms Provided
- Dental Insurance
- Life Insurance
- Short & Long Term Disability
- 401(K) Retirement Plan with Matching Contributions

If you want to work for a company that is focused on employee satisfaction while also meeting customer expectations, apply today by calling...

Bert Foster
567-644-3407
 or email: bfoster@midwestlogisticsystems.com

102 MOBILE HOME SALES

TO THE BEST OF OUR KNOWLEDGE
 All of the ads in this column represent legitimate offerings, however **The Daily Home** does recommend that readers exercise normal business caution in responding to ads.

110 ANIMALS

Happy Jack Onex: wound dressing repels flies and kills hatching larvae. Prevents infection. Promotes healing. **TALLADEGA COUNTY EXCHANGE** (447-6560) (kennelvax.com)

136 FURNISHED APARTMENTS

1 Br, all utilities incl., plus cable, single or couple, No pets, 256-362-8080; 256-493-3909

Starting at \$500/mo. 1 BR, all utilities & cable. No pets! Call 256-493-3909

138 UNFURNISHED APARTMENTS

Harrison Estates Apartments (205)814-1468
 Free Water, Garbage, Sewage and Pest Control. 1 & 2 Bedrooms. Pets Welcome! Managed by MRD Hwy 231 & 16th Ave. S Pell City
www.mrdapartments.com

138 UNFURNISHED APARTMENTS

AUTUMN TRACE APARTMENTS
 Sylacauga, occasional vacancies
 NICE 1, 2 AND 3BR
 256-249-2126

Pineview Landing Apts. in Talladega 1, 2, & 3 occasional vacancies. Call (256) 362-3412. www.pineviewlanding.com

T'dega- 2 Apartments for rent on Patty Ln. 1 is Available August 1st the other one is Available September 1st, \$575/mo., \$500/dep. **Must be 1 year lease.** 256-649-0411.

WOODHILL APARTMENTS
 Special for 1&2 Bedroom Apartments. Now Leasing! 1br \$300/mo. & 2br \$350/mo. All electric, CH&A, carpet, and laundry on site. We temporarily can rent apartments to all persons without income restrictions. Call 256-245-5128



SAVE A BUNDLE

RIVERBEND WATERFRONT APTS.
 1 Bedroom \$531⁰⁰
 2 Bedrooms \$563⁰⁰ to \$575⁰⁰
 3 Bedrooms \$647⁰⁰
 •Washer & dryer connections
 •Boat launch & piers
1-800-226-4404
205-884-4400
 Riverside

150 UNFURNISHED HOUSES
Odenville- 3br 2-1/2 ba, near schools, park & shopping. \$750mo rent & dep \$750. NO PETS 205-903-9571 or 205-674-3258

T'dega 2BR \$475mo 256-362-4194 256-223-1518

138 UNFURNISHED APARTMENTS

JUBILEE TOWNHOMES
 Pell City, AL

NOW LEASING

3 Bedroom...\$675
4 Bedroom...\$800
Call 205-338-2253
700 Jubilee Circle
JubileeTown@gmail.com

144 RESORTS RENTALS VACATIONS

Panama City Beach Beach-side Condo, Thomas Dr. Balc. Kitchen, Pool, \$100/day + tax sleeps 4, 256-820-4319 or 256-591-5157, 256-310-5648

150 UNFURNISHED HOUSES

Odenville- 3br 2-1/2 ba, near schools, park & shopping. \$750mo rent & dep \$750. NO PETS 205-903-9571 or 205-674-3258

T'dega 2BR \$475mo 256-362-4194 256-223-1518

154 WATERFRONT RENTALS

Lin. 557 Shelton Shores 2br, 1ba, Cabin for rent. Dock & year round water. \$600/mo w/\$600.dep. Smoke free residence. Credit Report & ref. req. 770-722-1829

PUBLIC NOTICE U.S. ARMY BASE REALIGNMENT AND CLOSURE DIVISION and the U.S. ENVIRONMENTAL PROTECTION AGENCY (USEPA) announce the former Alabama Army Ammunition Plant Superfund Site Five-Year Review

Public comment period: July 26 to August 24, 2017

The U. S. Army Base Realignment and Closure Division is conducting the fourth Five-Year Review (FYR) for the former Alabama Army Ammunition Plant (ALAAP) Superfund Site (i.e., the site). The objective of the review is to ensure the selected remedy for the site continues to protect human health and the environment.

The ALAAP facility was operated during World War II to produce nitrocellulose, single-base smokeless powder, and nitroaromatic explosives such as trinitrotoluene (TNT), dinitrotoluene (DNT), and tetryl. The site, located approximately 4 miles north of Childersburg, Alabama, on Alabama Highway 235, consists of approximately 2,235 acres of primarily undeveloped land and is commonly known as Area B. The site was listed on the National Priorities List (NPL) in July 1987 and has undergone numerous environmental investigations and site clean-ups. The Army transferred site ownership to the City of Childersburg in April 2003.

This FYR addresses Operable Unit (OU) 7 which encompasses all selected remedies at study areas within ALAAP – Area B. OU-7 consists of soil, surface water, and sediment from the following study areas:

- Study Area 2 - Smokeless Powder Facility
- Study Area 3 - Sanitary Landfill and Lead Facility
- Study Area 4 - Manhattan Project Area
- Study Area 7 - Northern TNT Manufacturing Area
- Study Area 8 - Acid/Organic Manufacturing Area
- Study Area 10W - Tetryl Manufacturing Area
- Study Area 16 - Flashing Ground
- Study Area 17 - Propellant Shipping Area
- Study Area 18 - Blending Tower Area
- Study Area 19 - Lead Facility
- Study Area 21 - Red Water Ditch
- Study Area 22 - Demolition Landfill
- Study Area 26 - Crossover Ditch
- Building 6 - Coke Oven
- South Georgia Road Dump

The selected remedy for the site includes land use controls. In addition, this FYR addresses remedial actions, including excavation, treatment, and disposal of contaminated soils and sediments at a number of study areas.

The FYR process includes review of data and new information, inspection of the sites, and community interviews. Completion of the current FYR is scheduled for September 2018.

The U. S. Army Base Realignment and Closure Division is seeking information from individuals familiar with the sites. As someone living in the vicinity, you may have information that can help the review team determine if the selected remedies are still protective. Some examples of the type of information that U. S. Army Base Realignment and Closure Division is interested in receiving include:

- Ways the selected remedy at the site is not protective of human health or the environment;
- Buildings or land around the site being used in new ways;
- Any unusual activities at the site, such as dumping, vandalism, or trespassing;
- Ways the selected remedy at the site has affected the area.

If you have information that might be helpful, please send it to:
U.S. Army Corps of Engineers
Mobile District
ATTN: EN-GE (Shirley)
PO Box 2288
Mobile, Alabama 36628,
251-690-2616 or
melissa.l.shirley@usace.army.mil

For additional information, historical documents may be reviewed at:
Local Document Repository
Earle A. Rainwater Memorial Library
124 Ninth Ave SW
Childersburg, Alabama 35044

THE DAILY HOME

State of Alabama
Talladega County

Before me, a notary public in and for the county and state above listed, personally appeared Nell Sinclair who, by me duly sworn, deposes and says that: "My name is Nell Sinclair. I am the clerk of The Daily Home. The Newspaper published the attached legal notice(s) in the issue(s) of:

July 26, 2017

August 2, 2017

The sum charged for publication was \$ 1035.00 The sum charged by the Newspaper for said publication does not exceed the lowest classified rate paid by commercial customers for an advertisement of similar size and frequency in the same newspaper(s) in which the public notice(s) appeared. There are no agreements between the Newspaper and the officer or attorney charged with the duty of placing the attached legal advertising notices whereby any advantage, gain or profit accrued to said officer or attorney."

Nell Sinclair
AFFIANT

Sworn and subscribed this 2 day of August, 2017.

[Signature]
Notary Public

Ad# 239183 - Display ad

ATTACHMENT C

RESPONSE TO PUBLIC INQUIRIES DURING PUBLIC COMMENT PERIOD

From: [Shirley, Melissa L CIV USARMY CESAM \(US\)](#)
To: [Elliott, Heather](#); [Samson, Connie D.](#)
Cc: [Van dyke, Andrew L \(Andy\) CIV USARMY HQDA ACSIM \(US\)](#)
Subject: Atkinson response to our answers: ALAAP 5 Year Review Public Notice
Date: Wednesday, August 23, 2017 7:14:21 PM

FYI see email below from Atkinson saying we have answered his comments/questions.

Thanks,
Melissa
251-690-2616

-----Original Message-----

From: Talladega County Probate [<mailto:probate@talladegacountyal.org>]
Sent: Wednesday, August 23, 2017 10:06 AM
To: Shirley, Melissa L CIV USARMY CESAM (US) <Melissa.L.Shirley@usace.army.mil>
Subject: [Non-DoD Source] RE: ALAAP 5 Year Review Public Notice

Ms. Shirley:

You have answered my questions and thanks for coming to Talladega County next week.

Maybe my schedule will allow me to meet you in Childersburg - if you have questions or need any assistance, please contact Tess Daniel, my Judicial assistant at 256-362-4175 x 1001.

Please remember my door is always open to you with kindest regards and best wishes.

Billy Atkinson

-----Original Message-----

From: Shirley, Melissa L CIV USARMY CESAM (US) [<mailto:Melissa.L.Shirley@usace.army.mil>]
Sent: Monday, August 21, 2017 4:02 PM
To: Talladega County Probate <probate@talladegacountyal.org>
Cc: Elliott, Heather <Heather.Elliott@calibresys.com>; Connie Samson (connie.d.samson@leidos.com) <connie.d.samson@leidos.com>
Subject: ALAAP 5 Year Review Public Notice

Mr. Atkinson,

Attached are responses to your questions/comments you raised during our telephone conversation on August 9th. I hope these responses answer your questions. If you would like to discuss them, please tell me. I am available this week via phone and I will be in Childersburg next week if you would like to speak in person.

Thank you for your interest in the ALAAP five year review, Melissa

Melissa L. Shirley, P.E.
US Army Corps of Engineers, Mobile District
CESAM-EN-GE 251-690-2616
109 St. Joseph Street, Mobile, AL 36602
PO Box 2288, Mobile, AL 36628
melissa.l.shirley@usace.army.mil

-----Original Message-----

From: Shirley, Melissa L CIV USARMY CESAM (US)

Sent: Friday, August 11, 2017 11:50 AM

To: Connie Samson (connie.d.samson@leidos.com) <connie.d.samson@leidos.com>; Elliott, Heather <Heather.Elliott@calibresys.com>; 'probate@talladegacountyal.org' <probate@talladegacountyal.org>
Subject: FW: ALAAP 5 Year Review Public Notice

Thank you for the revision. We will get back to you with responses.

Happy Friday,
Melissa
251-690-2616

-----Original Message-----

From: Talladega County Probate [<mailto:probate@talladegacountyal.org>]

Sent: Friday, August 11, 2017 8:45 AM

To: Shirley, Melissa L CIV USARMY CESAM (US) <Melissa.L.Shirley@usace.army.mil>

Subject: [Non-DoD Source] RE: ALAAP 5 Year Review Public Notice

See below on #4

Billy L. Atkinson, Probate Judge
Talladega County
#1 Court Square
P.O. Box 737
Talladega, AL 35161
256-362-4175

-----Original Message-----

From: Shirley, Melissa L CIV USARMY CESAM (US) [<mailto:Melissa.L.Shirley@usace.army.mil>]

Sent: Thursday, August 10, 2017 1:58 PM

To: Talladega County Probate <probate@talladegacountyal.org>

Subject: ALAAP 5 Year Review Public Notice

Mr. Atkinson

Thank you for your call yesterday in response to the notice we put in the paper about the upcoming Five Year Review at ALAAP.

We will add your questions/comments to the responsiveness section of the five year review. Please read the questions/comments below and tell me if you have any change/additions.

1. You recommended we contact the Childersburg library and speak to Susan Carpenter for info about ALAAP.
2. You asked how the cancer rate around ALAAP compares to the cancer rate in other parts of the country.
3. You stated that citizens are concerned about ALAAP because they need jobs and work in the area. The impression is that you are concerned that the Industrial Park will not succeed.
4. You mentioned the burned soil and that the public is not aware of it. I think you meant that the public is not aware that the site was cleaned up - and how it was cleaned up, and when and how effective.
5. You asked if the property can be used for industry. You stated that "the signs say it is contaminated so it can't be used", and you asked if some parts could be used.

Thank you for your interest in the ALAAP five year review, Melissa

Melissa L. Shirley, P.E.
US Army Corps of Engineers, Mobile District
CESAM-EN-GE 251-690-2616
109 St. Joseph Street, Mobile, AL 36602
PO Box 2288, Mobile, AL 36628
melissa.l.shirley@usace.army.mil

Alabama Army Ammunition Plant – Area B Five Year Review, August 17, 2017

Responses to questions raised by Billy Atkinson in response to ALAAP Five Year Review public notice.

1. Question: You recommended we contact the Childersburg library and speak to Susan Carpenter for info about ALAAP.
Response: Thank you for the recommendation. We speak to the librarian at the Childersburg library when we add documents to the administrative record, which is housed at the library.
2. Question: You asked how the cancer rate around ALAAP compares to the cancer rate in other parts of the country.
Response: While there is no information available about cancer rates in the immediate vicinity of ALAAP, please see the attached memo for information about cancer rates in Talladega County and how the rates compare to other parts of the state and the country.
3. Question: You stated that citizens are concerned about ALAAP because they need jobs and work in the area. You are concerned that the Industrial Park will not succeed.
Response: The Army understands your concern and supports the redevelopment plans for the Childersburg Industrial Park.
4. Question: You mentioned the burned soil and that the public is not aware of it; that the public is not aware that the site was cleaned up and how it was cleaned up, and when and how effective.
Response: Information about the cleanup of ALAAP is available at the Childersburg library. The Cleanup is summarized in the 2013 Five Year Review Report and will also be summarized in the five year review currently being prepared by the Army. The Army will email a copy of the 2013 Five Year Review Report to you if you would like.
5. Question: You asked if the property can be used for industry. You stated that "the signs say it is contaminated so it can't be used", and you asked if some parts could be used.
Response: All parts of the former ALAAP can be used for industrial purposes, such as warehousing, manufacturing, office buildings, and vehicle maintenance. As with most properties within an incorporated area, there are a few restrictions for anyone developing the property. The restrictions on the former ALAAP are listed on the signs: no unauthorized excavation, digging, grading, or drilling; no access or use of groundwater, and no use of the property for residential purposes, such as housing, playgrounds, or childcare facilities. The signs are in place to notify users of these restrictions.

Additional information about reuse of superfund sites may be found in the following document: A Citizen's Guide to Understanding Institutional Controls at Superfund, Brownfields, Federal Facilities, Underground Storage Tanks, and Resource Conservation and Recovery Act Cleanups

<https://www.epa.gov/fedfac/citizens-guide-understanding-institutional-controls-superfund-brownfields-federal-facilities>

Question 2 from Mr. Billy L. Atkinson in response to public notice for the ALAAP – Area B Five Year Review: How does the cancer rate around ALAAP compare to the cancer rate in other parts of the country?

While there is no information available about cancer rates in the immediate vicinity of ALAAP, please see the information below about cancer rates in Talladega County and how the rates compare to other parts of the state and the country.

The following information was compiled based on statistics collected from the National Cancer Institute and the Centers for Disease Control and Prevention (CDC)'s State Cancer Profiles (<https://www.statecancerprofiles.cancer.gov/index.html>). This website provides the ability to view the cancer statistics for a variety of metrics, including geographical region, race, age, sex, and specific cancer types. The statistics cited below reflect data compiled from five years (2010-2014) and include all races, all ages, both sexes, and all cancer types. The data from 2010-2014 is the most current data available that have completed the national data synthesis and quality assurance processes.

Cancer incidence is defined by the number of new cases of cancer per 100,000 people per year. Data from 2010-2014 indicates that the national cancer incidence is 443.6 whereas individual states in the U.S. range from 373.8 (New Mexico) to 510.8 (Kentucky). Alabama ranks 30th in cancer incidence (448) in the United States, at a rate slightly above the national incidence rate. Ranking 30th in the cancer incidence in the United States means that there are 29 states in the United States that have a higher cancer incidence rate than Alabama. The overall trend for 2010 – 2014 shows a decrease in cancer incidence for the United States and Alabama (shown in Table 1 below). States surrounding Alabama include Mississippi, Georgia, and Tennessee. Each of the surrounding states has a higher cancer incidence than the United States and Alabama; however the overall trend for five years (2010-2014), like Alabama, shows a decrease in cancer incidence for these three surrounding states.

ALAAP is located in Talladega County. Talladega County, Clay County (east of Talladega County), and Calhoun County (north of Talladega County) have cancer incidences above the national and Alabama rates. Shelby County (west of Talladega County) and Coosa County (south of Talladega County) are below the national and Alabama cancer incidence rates. Talladega and its surrounding counties have maintained a stable cancer incidence from 2010 – 2014. Table 1 below provides a summary of this information.

Table 1. Summary of Cancer Incidence Rates in the United States, Alabama, and Talladega County and Surrounding States and Counties

(Source: <https://www.statecancerprofiles.cancer.gov/incidencerates/>)

County	Age-Adjusted Incidence Rate - cases per 100,000	Average Annual Count	Recent Trend
US ^{1,3}	443.6	1,556,536	falling
States^{2,3}			
Mississippi	465.1	15,351	falling
Tennessee	457.7	33,972	falling
Georgia	452.5	44,972	falling
Alabama	448	25,117	falling
Alabama Counties^{2,3}			
Clay County	467.2	87	stable
Calhoun County	458.4	648	stable
Talladega County	451.2	450	stable
Shelby County	433.7	904	stable
Coosa County	363.2	59	stable

¹ Source: CDC's National Program of Cancer Registries Cancer Surveillance System (NPCR-CSS) November 2016 data submission and SEER November 2016 submission as published in United States Cancer Statistics.

² Source: State Cancer Registry and the CDC's National Program of Cancer Registries Cancer Surveillance System (NPCR-CSS) November 2016 data submission.

³ Source: Incidence data provided by the National Program of Cancer Registries (NPCR). EAPCs calculated by the National Cancer Institute using SEER* Stat. Rates are age-adjusted to the 2000 US standard population (19 age groups: <1, 1-4, 5-9, ... , 80-84,85+). Rates are for invasive cancer only (except for bladder cancer which is invasive and in situ) or unless otherwise specified. Population counts for denominators are based on Census populations as modified by NCI. The 1969-2015 US Population Data File is used with NPCR November 2016 data.

EAPC = Estimated Annual Percentage Change

SEER = Surveillance, Epidemiology, and End Results

References:

<https://www.statecancerprofiles.cancer.gov/index.html>

<https://www.statecancerprofiles.cancer.gov/incidencerates/>

Samson, Connie D. [US-US]

Subject: FW: public comments on ALAAP 5 Year Review Public Notice
Attachments: US Army Corp Eng.docx

-----Original Message-----

From: jmpowell1@charter.net [mailto:jmpowell1@charter.net]

Sent: **Thursday, August 24, 2017 4:16 PM**

To: Shirley, Melissa L CIV USARMY CESAM (US) <Melissa.L.Shirley@usace.army.mil>

Subject: [Non-DoD Source] ALAAP 5 Year Review Public Notice

Please find attached a copy of the letter which is being mailed to you.

Monty Powell

Sent from Mail <Blocked<https://go.microsoft.com/fwlink/?LinkId=550986>> for Windows 10

To: U.S. Army Corps of Engineers
Mobile District
Attn: EN-GE (Shirley)
PO Box 2288
Mobile, AL 36628

From: Industrial Board of Childersburg
Chamber of Commerce of Greater Coosa Valley
Childersburg Commercial Development Authority

RE: Comments to the Alabama Ammunition Plant Five Year Review

In response to your request for public comments, the aforementioned groups representing the commercial interests of the City of Childersburg would ask the army and the USEPA to consider the following:

The Childersburg Industrial Park, commonly known as Area B is one of the prime areas for industrial development in the state of Alabama. We have existing railroad access, utilities, proximity to the Coosa river and over 2,200 acres of land ready for development. With all of these advantages, we have been unable to attract industry to the area as one might expect.

The base closed 72 years ago and millions of dollars have been spent on "cleanup" of the site. Yet the building restrictions last placed on the property some 14 years ago have remained. In 1977, more than 1,200 acres of the plant property was sold to Kimberly Clark for the construction of a massive paper mill. During the construction, contamination was found on approximately 200 acres of the property, which was leased back by the army, "cleaned up" and returned to the company. Over 2000 employees safely worked on that property. Yet property contiguous to the Kimberly Clark property has had very restrictive land constraints.

The deed conveying the property to the city contained restrictive covenants as to the type of construction allowed; ex. no residential. The deed provides that the property has been remediated for commercial and industrial purposes. Further, it restricts the use of ground water, without permission and the excavation of any property without medical extraction plan that is approved.

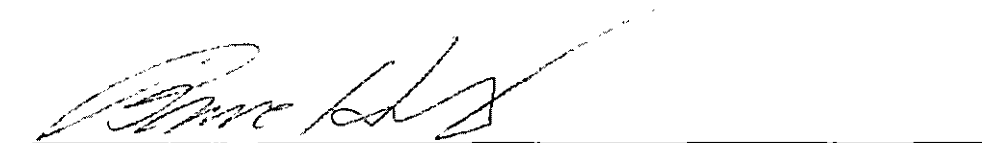
The above-named commenters would like to strenuously object to the placement of over _____ warning signs throughout the property. Frankly, it makes one feel unsafe by merely driving or walking by the property. These signs are unnecessary and repetitious. Because of the deed restrictions, no one may purchase said property without being made aware of the restrictions and having them incorporated in their deed. Further, before building could commence, a permit must be obtained from the city building inspector. Therefore, we respectfully ask that these "warning signs" be removed at the earliest possible date.

Additionally, the deed, itself contemplates the removal of restrictions when the property has been appropriately remedied. It appears that the restrictions were placed upon all transferred property, even though many of the acres were not contaminated or had been remediated to the point at which there was no danger. For example, the 150 plus acres that are adjacent to the Coosa river were never used for manufacturing and were turned over to the city for recreational purposes. We, therefore respectfully request that acres which no longer pose a threat to safety, if they ever did, be removed from the restrictive covenants as soon as practical.

Finally, for areas that are found to present a problem, we ask that those areas be "cleaned up" so that the grasp of commercial and industrial development can be fully realized. We, of course do not advocate the use of property which could be harmful. But we respectfully submit that the length of time the property has been without harmful manufacturing, the millions of dollars already spent on remediation should be considered in the release of restrictions altogether or the loosening of restrictions which would more easily allow development of industry in the park.

While public safety is always of great concern, the lack of jobs and commercial development are also detrimental to the human development. Over the past years, our paper plant has been the only factory employment and now employs only a couple of hundred people. The downtown of Childersburg is primarily a ghost town. The city and the surrounding area are desperate for the creation of new jobs. We, therefore implore you to seek to protect the environment without unnecessary restrictions that preclude economic gain for our city.

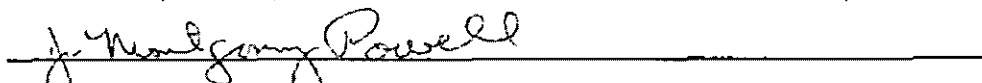
Thank you for your consideration.



Bruce Hunt, President, Industrial Board of Childersburg



Tom Roberts, Director, Chamber of Commerce of Greater Coosa Valley



J. Montgomery Powell, President, Childersburg Commercial Development Authority



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

REPLY TO
ATTENTION OF

Base Realignment and Closure Division

26 October 2017

Industrial Board of Childersburg
Chamber of Commerce of Greater Coosa Valley
Childersburg Commercial Development Authority

SUBJECT: September 2017 letter on the Five Year Review at the Alabama Army Ammunition Plant (ALAAP) – Area B from the Industrial Board of Childersburg, Chamber of Commerce of Greater Coosa Valley and Childersburg Commercial Development Authority

Mr. Hunt, Mr. Roberts, and Mr. Powell:

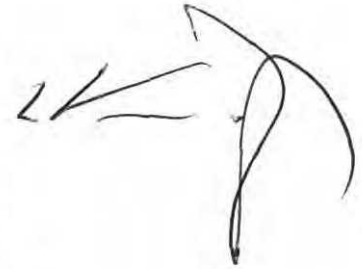
Thank you for taking the time to respond to the Army's request for public comment as part of the five-year review process.

All of the former ALAAP – Area B property is available for commercial/industrial use now and has been since the property was transferred to the City in 2003. All identified soil sources were remediated to industrial standards as documented in the ALAAP Area B Soils, Surface Water and Sediment Record of Decision (ROD), finalized in 2012. The deed restrictions prohibit unauthorized groundwater access, soil excavation without a pre-approved soils management plan, and any use other than commercial/industrial. We expect these deed restrictions to remain on the property in perpetuity and we do not believe they are overly restrictive.

The Army understands that the warning signs, placed eleven years after the property transferred, have created unintentional issues for the City's redevelopment efforts. The warning signs were placed at specific study areas in 2014 after the ROD was finalized and as defined in the Land Use Control Implementation Plan (LUCIP) ALAAP - Area B. The Army is in the process of reviewing the LUCIP, at the Mayor's request, and will coordinate with Environmental Protection Agency (EPA) Region IV and Alabama Department of Environmental Management (ADEM), to see if the number of warning signs can be decreased.

The Army would be happy to meet with you to discuss your concerns further. If you have any questions or would like to arrange a meeting, please contact Ms. Heather Elliott at 256-217-1678.

Sincerely,



Andrew Van Dyke
Program Manager
Army BRAC Office

Copies Furnished:

Tim Woolheater, EPA
Daniel Arthur, ADEM
Melissa Shirley, USACE
Susan Ryan, ELD
Heather Elliott, BRAC/CALIBRE

City of Childersburg

COUNCIL MEMBERS:

BILLY LESTER
MAYOR PRO TEMPORE
R. M. (BUBBA) CLECKLER, JR.
RALPH R. RICH
ANGES TWYMON
MICHELE N. WHISMAN



JAMES D. PAYNE
MAYOR

SANDRA G. DONAHOO
CITY CLERK

AIMEE P. BURNETTE
TREASURER

March 9, 2016

Mr. Harold Taylor
EPA-4SF-FFB
61 Forsyth Street
Atlanta, GA 30303

Dear Mr. Taylor,

We request that the City of Childersburg be allowed to remove the signs from the study areas associated with the former Alabama Army Ammunition Plant (ALAAP). The warning signs are required in section 3.2.2. of the Land Use Control Implementation Plan (LUCIP) for ALAAP Area B dated November 2013. At the time of our review of the LUCIP, we did not realize the impact these signs would have on our ability to market the property. Since the signs were installed in 2014, they have been a deterrent to potential buyers, and have served to scare people away from locating industry on the property by stating the property is contaminated, which it is not. It simply has land use controls on it that limit it to industrial use. While the signs at the fenced in landfills are acceptable, the signs for the study areas are very numerous and redundant as the property already has use restrictions incorporated into the deeds, ordinances and covenants and greatly discourage companies from considering the site as a possible location.

Most recently, Fritz Winter North America, an automotive brake manufacturer, eliminated the Childersburg Industrial Park due to environmental concerns. The company would have invested \$194 million and have employed 343 people had concerns not been raised by the signs declaring the site contaminated.

We look forward to hearing from you on this matter as it is of great importance to the reuse of the former ammunition plant site and to economic growth of Childersburg.

Sincerely,

A handwritten signature in black ink, appearing to read "James D. Payne".

James Payne
Mayor

Cc: Tim Woolheater
DPA-4SF-FFB
61 Forsyth Street
Atlanta, GA 30303

Andrew Van Dyke
DAIM-ODB
600 Army Pentagon
Washington, DC 203010-0600

Daniel Arthur
ADEM
P.O. Box 301463
Montgomery, AL 36130-1463

NOTICE

**NO UNAUTHORIZED
EXCAVATION, DIGGING,
GRADING, OR DRILLING.**

**NO ACCESS OR
USE OF GROUNDWATER.**

NO RESIDENTIAL USE.

NO PLAYGROUNDS.

**CONTACT CLRA CHAIRMAN
AT 256-378-5521**

REFERENCE: SA2

City of Childersburg

COUNCIL MEMBERS:

BILLY LESTER
MAYOR PRO TEMPORE
TERRY KAYE CLECKLER
RALPH R. RICH
ANGES TWYMON
MICHELE N. WHISMAN



JAMES D. PAYNE
MAYOR

AIMEE P. BURNETTE
CITY CLERK/TREASURER

August 31, 2016

Mr. Tim Woolheater
EPA-4SF-FFB
61 Forsyth Street
Atlanta, GA 30303

Dear Mr. Woolheater,

The City of Childersburg appreciates the opportunity to discuss the concerns and issues relative to the current signs located at the Industrial Site Property associated with the former Alabama Army Ammunition Plant. The warning signs are required in section 3.2.2. of the Land Use Control Implementation Plan (LUCIP) for ALAAP Area B dated November 2013. At the time of our review of the LUCIP, we did not realize the impact these signs would have on our ability to market the property. Since the signs were installed in 2014, they have been a deterrent to potential buyers. The signs located in the study areas are numerous and redundant as the property already has use restrictions incorporated into the deeds, ordinances and covenants and greatly discourage companies from considering the site as a possible location.

Most recently, Fritz Winter North America, an automotive brake manufacturer, eliminated the Childersburg Industrial Park due to environmental concerns. The company would have invested \$194 million and have employed 343 people had concerns not been raised by the signs declaring the site contaminated.

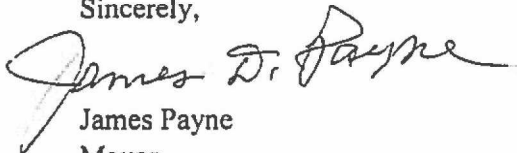
The City of Childersburg request that the sign be placed only at the entrance of the Industrial Park with prospective buyers required to sign an affidavit acknowledging the land use restrictions relative to excavating, water use, and development. Another alternative, is the sign be limited in quantity and the language be changed:

NOTICE:
Excavating Permit Required.

Water is not suitable for human consumption.

We look forward to hearing from you on this matter as it is of great importance to the reuse of the former ammunition plant site and to economic growth of Childersburg.

Sincerely,


James Payne
Mayor

TIM WOOLHEATER
DPA-4SF-FFB
61 FORSYTH STREET
ATLANTA, GA 30303

ANDREW VAN DYKE
DAIM-ODB
600 ARMY PENTAGON
WASHINGTON, DC 203

DANIEL ARTHUR
ADEM
P.O. BOX 301463
MONTGOMERY, AL 36130-1463



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

November 1, 2016

RECEIVED

NOV 1 2016

CITY OF CHILDERSBURG

Mayor James D. Payne
City of Childersburg
201 8th Avenue
Childersburg, Alabama 35044-0369

Dear Mayor Payne:

Thank you for your letter dated August 31, 2016, following the meeting with the Army, ADEM, EPA and the City of Childersburg regarding the Land Use Controls (LUCs) associated with the former Alabama Army Ammunition Plant (ALAAP). EPA has considered the request that the City be allowed to remove certain signs and modify the LUCs to have the perspective purchasers sign an affidavit of acknowledgement regarding the controls. EPA remains committed to the redevelopment of the former ammunition plant in a manner that is protective of human health and the environment.

The signs are an important aspect of the remedy with regard to protectiveness as they notify not just prospective purchasers but any others that may use the property. While it is regrettable that the contamination on the property may limit certain prospects, EPA believes that signs serve a critical role in informing the public that they should use due diligence in determining whether they would like to use or purchase this property. While it is the case that certain prospective purchasers consider "less encumbered" property as more advantageous, there have been other factors that enabled companies around the country to redevelop Superfund properties. The signs certainly raise the level of awareness of all parties regarding the contamination issues which serves all parties in the redevelopment efforts.

This being said, EPA has accepted an Army request to modify the signs in order to remove the word "contaminated" from the signs. With the modification to the signs, EPA senses that the signs will serve the purpose of notifying prospective purchasers such that they may research the issues concerning the property and make a properly informed choice regarding its purchase. EPA expects that the modification will strike the appropriate balance between public concern and public awareness.

Should you have any further concerns, please feel free to contact me at 404-562-8510 or woolheater.tim@epa.gov.

Sincerely,



Tim Woolheater
Senior Remedial Project Manager
Restoration and Sustainability Branch
Superfund Division

cc: Andrew Van Dyke
Army Program Manager, Operations Army Medical Branch
Department of the Army, Assistant Chief of Staff for Installation Management
Taylor Building, Room 5000
2530 Crystal Drive
Arlington, VA 22202

Arthur Daniel
Alabama Department of Environmental Management
1400 Coliseum Blvd.
Montgomery, AL 36110-2059

ATTACHMENT D

INTERVIEW RECORDS AND LETTER TO PROPERTY OWNERS

INTERVIEW RECORD		
Site Name: Alabama Army Ammunition Plant Area B		EPA ID No.: AL6210020008
Subject: Operable Unit 7 Five-Year Review		Time: 10:00 Date: 05/25/17
Type: <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Visit <input type="checkbox"/> Other Location of Visit: City Hall, Childersburg, AL		<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing
Contact Made By:		
Name: Mike Klidzejs/Rupa Price	Title: Geologist/Engineer	Organization: Leidos
Individual Contacted:		
Name: Aimee Burnette Ken Wesson Calvin Miller	Title: City Clerk City Mayor Executive Director, Economic Development Authority (EDA)	Organization: City of Childersburg City of Childersburg Talladega County
Telephone No: (256) 378-5521 Fax No: E-Mail Address: aburnette@childersburg.org		Street Address: City, State, Zip: Childersburg, AL
Summary Of Conversation		
<ol style="list-style-type: none"> 1. What is your overall impression of the project? (general sentiment) 2. What effects have site operations had on the surrounding community? 3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details. 4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details. 5. Do you feel well informed about the site's activities and progress? 6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation? <p>Each individual was interviewed separately and afforded an opportunity to respond to the questions. In general, the responses from each focused on the negative impact that the LUC warning signs (at the study areas, requiring LUCs) were having on perspective entities interested in purchasing ALAAP – Area B property. Each suggested that the signs were a significant contributor to fleeting interest in ALAAP property.</p> <p>Calvin Miller added that he feels the USACE keeps him well informed and that the police do a good job of patrolling ALAAP.</p>		

INTERVIEW RECORD

Site Name: Alabama Army Ammunition Plant Area B		EPA ID No.: AL6210020008	
Subject: Operable Unit 7 Five-Year Review		Time: 10:00	Date: 7/14/17
Type: <input type="checkbox"/> Telephone <input type="checkbox"/> Visit <input checked="" type="checkbox"/> Other Location of Visit: Form completed by interviewee.		<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing	
Contact Made By:			
Name: Mike Klidzejs		Title: Geologist	
Organization: Leidos			
Individual Contacted:			
Name: Melissa Shirley, P.E.		Title: Project Manager	
Organization: USACE, Mobile District			
Telephone No: (251) 690-2616		Street Address:	
Fax No:		City, State, Zip: Mobile, AL	
E-Mail Address: Melissa.l.shirley@usace.army.mil			
Summary Of Conversation			
<p>1. What is your overall impression of the project? (general sentiment)</p> <p>Response: My overall impression of the property is that it is an asset to the Childersburg/Sylacauga/Birmingham area as an industrial park and I want to help the city and county utilize it to its full potential.</p> <p>2. Are you aware of any changes in any laws or regulations that may impact protectiveness?</p> <p>Response: No.</p> <p>3. What is your impression on whether the site has been in compliance with permitting or reporting requirements?</p> <p>Response: I know that the City has a building permit requirement that allows the Childersburg LRA an opportunity to inform the user and the user's contractor about LUCs applicable to the site. I have been contacted by users, so my impression is that the permit program is working. I am aware that there are reporting requirements for the ADEM Environmental Covenant that the Childersburg LRA is responsible for submitting to ADEM. I am not aware if the City or other landowners are complying with these requirements. I am aware of the requirements for an excavation plan that is required by the Quitclaim Deed and the LUCIP. I was contacted in July 2016 by Mr. S. Goins about the requirements for completing an excavation plan since he was interested in developing property on ALAAP. Therefore, my impression is that the site has been in compliance with that part of the reporting requirements.</p> <p>4. What is your impression on site activities, status, and issues?</p> <p>Response: My impression is that the City of Childersburg and the Talladega County Economic Development Authority (EDA) is trying to market the property and that we are trying to help them as much as we can.</p> <p>5. What is your impression on the status of institutional controls, site access controls, new ordinances in place, changes in actual or projected land use, complaints being filed, and unusual activities at the site?</p> <p>Response: My impression is that the institutional controls are working because I have been contacted several times over the last few years with requests for information and excavation approval requests. I do not know about new ordinances, project land use, or site access controls. All excavation approval requests to date have been approved.</p> <p>6. Have there been any complaints, violations, or other incidents related to the site requiring a response by your office? If so, please give details of the events and results of the responses.</p> <p>Response: No.</p> <p>7. Can you cite examples on how requirements of the LUCIP have or have not been followed?</p> <p>Response: I was contacted in July 2016 by Mr. S. Goins about the requirements for completing an excavation plan since he was interested in developing property on ALAAP. I was also contacted by Hawk Plastics in March 2016 and Blair Block in October 2014 about using the property and the excavation plan requirements. Also, the Talladega County Economic Development Authority (EDA) has contacted me several times to ask questions about the LUCIP restrictions in order that they be able to inform potential landowners. Therefore, my impression is that the site has been in compliance with that part of the reporting requirements.</p> <p>8. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?</p> <p>Response: I think the new administration at the City of Childersburg will work with BRAC to utilize the industrial park so that it will benefit the community.</p>			

INTERVIEW RECORD

Site Name: Alabama Army Ammunition Plant Area B		EPA ID No.: AL6210020008	
Subject: Operable Unit 7 Five-Year Review		Time: 10:00	Date: 7/14/17
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other Location of Visit:		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Contact Made By:			
Name: Mike Klidzejs		Title: Geologist	Organization: Leidos
Individual Contacted:			
Name:		Title:	Organization: ADEM
Telephone No: (334) 271-7786		Street Address:	
Fax No:		City, State, Zip: Montgomery, AL	
E-Mail Address:			
Summary Of Conversation			
<p>1. What is your overall impression of the project? (general sentiment)</p> <p>Response: The process of the Five Year Review appears to be working properly. However, although it appears that the Army and USACE are working toward mitigating and controlling risks at the site, the overall progress is slow.</p> <p>2. Are you aware of any changes in any laws or regulations that may impact protectiveness?</p> <p>Response: No.</p> <p>3. What is your impression on whether the site has been in compliance with permitting or reporting requirements?</p> <p>Response: Required reports have been submitted in a timely manner.</p> <p>4. What is your impression on site activities, status, and issues?</p> <p>Response: Although it appears that the Army and USACE are working toward mitigating and controlling risks at the site, the overall progress is slow.</p> <p>5. What is your impression on the status of institutional controls, site access controls, new ordinances in place, changes in actual or projected land use, complaints being filed, and unusual activities at the site?</p> <p>Response: Institutional controls seem to be in order and the land use controls maintained. I have been made aware of reports of some attempts of persons trying to trespass in order to illegally hunt on the property.</p> <p>6. Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by your office regarding the site? If so, please give purpose and results.</p> <p>Response: ADEM attempts to visit the site at least once per year. These visits have historically been conducted during sampling or inspection events conducted by USACE's contractor. The primary purpose of these visits is to maintain an awareness of site conditions.</p> <p>7. Have there been any complaints, violations, or other incidents related to the site requiring a response by your office? If so, please give details of the events and results of the responses.</p> <p>Response: No.</p> <p>8. Do you feel well informed about the site's activities and progress?</p> <p>Response: Yes.</p> <p>9. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?</p> <p>Response: No.</p>			



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

REPLY TO ATTENTION OF
Base Realignment and Closure Division

August 11, 2017

Dear Sir/Madam,

The U.S. Army Base Realignment and Closure Division is conducting a Five-Year Review (FYR) for the former Alabama Army Ammunition Plant (ALAAP) Superfund Site (i.e., ALAAP). You may have seen the notice published recently in the *Daily Home* newspaper on July 26, 2017 and August 2, 2017 related to the Five Year Review efforts. The objective of the review is to ensure that the selected remedy of land use controls continues to protect human health and the environment.

As you may know, ALAAP was operated during World War II to produce materials in support of the war efforts. Since ALAAP closed it has undergone numerous environmental investigations and clean-ups. After the clean-up efforts, land use controls were selected as the remedy for areas of ALAAP including, potentially, some of the property you purchased from the City of Childersburg. The land use controls include only using the property for industrial purposes and not disturbing the soil or accessing the groundwater without approval.

As part of ensuring that the land use controls are still effective, the U.S. Army Base Realignment and Closure Division is interested in receiving additional information from you, as a property owner.

Enclosed is an interview form with a list of questions to help us determine whether the land use controls are working. Please complete the interview form and return in the pre-addressed envelope by September 15th. If you would like to scan or take a photo of the interview form, you may email the scan/photo to melissa.l.shirley@usace.army.mil. If you have any questions or prefer to discuss the information via telephone, please contact us at (251)690-2616. Our Army Representative would be happy to speak with you.

Thank you again for your cooperation.

Sincerely,

Andrew Van Dyke
Program Manager
Army BRAC Office

INTERVIEW RECORD

Site Name: Alabama Army Ammunition Plant Area B		EPA ID No.: AL6210020008	
Subject: Operable Unit 7 Five-Year Review		Time:	Date:
Type: Form Provided via U.S. Postal Service to Property Owner			
Individual Contacted:			
Name:	Title:	Property Owner (Corporation Name if applicable):	
Telephone No: Fax No: E-Mail Address:		Street Address: City, State, Zip:	
Information Requested:			
<p>1. What is your overall impression of ALAAP?</p> <p>2. Has the site had any effects on your property or the surrounding community?</p> <p>3. Are you aware of use restrictions on your property?</p> <p>4. Do you have any plans to purchase any additional ALAAP property, or to sell or lease any of you property to another entity?</p> <p>5. Do you have any plans to build new structures or drill wells on your property?</p> <p>6. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities?</p> <p>7. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?</p>			

Write on back of form if more room is needed.

INTERVIEW RECORD

Site Name: Alabama Army Ammunition Plant Area B		EPA ID No.: AL6210020008
Subject: Operable Unit 7 Five-Year Review		Time: 10:30AM Date: 8-29
Type: Form Provided via U.S. Postal Service to Property Owner		
Individual Contacted:		
Name: Matt Blair	Title: Owner/V.P.	Property Owner (Corporation Name if applicable): Blair Block LLC.
Telephone No: 256-378-3345	Street Address: 165 First Rd.	
Fax No: 256-378-3347	City, State, Zip: Childersburg, AL 35044	
E-Mail Address: matl@blairblock.com		

Information Requested:

1. What is your overall impression of ALAAP?
Well organized, friendly, helpful.
2. Has the site had any effects on your property or the surrounding community?
The "Notice" signs haven't been very well recieved. People start rumors about what used to be here.
3. Are you aware of use restrictions on your property?
Yes. Melissa has been to our property many times and has been extremely helpful & knowledgeable.
4. Do you have any plans to purchase any additional ALAAP property, or to sell or lease any of you property to another entity?
Not at this time.
5. Do you have any plans to build new structures or drill wells on your property?
We still plan to put up a building across from our existing operation, but our permits have been approved.
6. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities?
No, none.
7. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?
Maybe have some type of website where the property owners can be informed of when testing

Write on back of form if more room is needed.

is being done, and also publish the results of the testing. Maybe this is being done and I'm just unaware. The site could also provide do's & don'ts or FAQs about the ALAAP property.

INTERVIEW RECORD

Site Name: Alabama Army Ammunition Plant Area B		EPA ID No.: AL6210020008	
Subject: Operable Unit 7 Five-Year Review		Time: 12:00	Date: 09.12.17
Type: Form Provided via U.S. Postal Service to Property Owner			
Individual Contacted:			
Name: <i>Sonya D. Reynolds</i>	Title: <i>CPO/Plant Manager</i>	Property Owner (Corporation Name if applicable): <i>Jx Nippon Oil & Energy USA Inc</i>	
Telephone No: <i>256-378-0131</i>	Street Address: <i>100 Nippon Drive</i>		
Fax No: <i>256-378-0167</i>	City, State, Zip: <i>Chiloesburg AL 35044</i>		
E-Mail Address: <i>S.reynolds@jncusa.com</i>			
Information Requested:			
<p>1. What is your overall impression of ALAAP? <i>good</i></p> <p>2. Has the site had any effects on your property or the surrounding community? <i>No</i></p> <p>3. Are you aware of use restrictions on your property? <i>yes</i></p> <p>4. Do you have any plans to purchase any additional ALAAP property, or to sell or lease any of you property to another entity? <i>maybe</i></p> <p>5. Do you have any plans to build new structures or drill wells on your property? <i>No to the wells. We may expand in the future.</i></p> <p>6. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? <i>No</i></p> <p>7. Do you have any comments, suggestions, or recommendations regarding the site's management or operation? <i>No</i></p>			

Write on back of form if more room is needed.

INTERVIEW RECORD

Site Name: Alabama Army Ammunition Plant Area B		EPA ID No.: AL6210020008	
Subject: Operable Unit 7 Five-Year Review		Time:	Date: 8/28/17
Type: Form Provided via U.S. Postal Service to Property Owner			
Individual Contacted:			
Name: D.L. Moody, Jr.	Title: PRESIDENT	Property Owner (Corporation Name if applicable): HAWK INDUSTRIES, LLC.	
Telephone No: 256-378-5931	Street Address: 193 First Rd.		
Fax No: NONE	City, State, Zip: ALPINE, AL 35014		
E-Mail Address: hawkplastics@gmail.com			

Information Requested:

1. What is your overall impression of ALAAP?
GOOD
2. Has the site had any effects on your property or the surrounding community?
We did not purchase from City of Childersburg. We are adjacent (west) of Water Treatment Plant. - North of First Rd.
3. Are you aware of use restrictions on your property?
Only as an industrial use. - We comply
4. Do you have any plans to purchase any additional ALAAP property, or to sell or lease any of you property to another entity?
NO
5. Do you have any plans to build new structures or drill wells on your property?
NOT CURRENTLY
6. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities?
NO
7. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?
NO

Write on back of form if more room is needed.

ATTACHMENT E
SITE INSPECTION CHECKLIST AND PHOTOGRAPHS

Site Inspection Checklist

I. SITE INFORMATION	
Site name: ALAAP – Area B	Date of inspection: 5/24/17
Location and Region: Childersburg, AL	EPA ID: AL6210020008
Agency, office, or company leading the five-year review: BRAC	Weather/temperature: Partly to mostly cloudy, temperature in low 80's
Remedy Includes: (Check all that apply) <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input checked="" type="checkbox"/> Landfill cover containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </div> <div style="width: 50%;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls </div> </div>	
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached	
II. INTERVIEWS (Check all that apply)	
1. O&M site manager <u>Ken Wesson</u> <u>Mayor</u> <u>5/25/17</u> <div style="display: flex; justify-content: space-between; width: 100%;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input checked="" type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions: :: Report attached <u>See FYR Report Community Notification, Involvement & Site Interviews section</u>	
2. O&M staff <u>None</u> _____ _____ <div style="display: flex; justify-content: space-between; width: 100%;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions: <input type="checkbox"/> Report attached _____	

Contact	<u>Daniel Arthur</u>	<u>Project Manager</u>	<u>7 14 17</u>	<u>(334) 271-7786</u>
	Name	Title	Date	Phone no.

Contact _____
Name Title Date Phone no.

Contact	Name	Title	Date	Phone no.
---------	------	-------	------	-----------

Contact _____

Name Title Date Phone no.

Refer to attachment with Interview Records

[illegible]

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date	x N A x N A x N A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan emergency response plan Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date	x N A x N A
3.	O&M and OSHA Training Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	x N A
4.	Permits and Service Agreements <input type="checkbox"/> Air discharge permit <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Other permits _____ Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date	x N A x N A x N A x N A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	x N A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	x N A
7.	Groundwater Monitoring Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	x N A
8.	Leachate Extraction Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	x N A
9.	Discharge Compliance Records <input type="checkbox"/> Air <input type="checkbox"/> Water (effluent) Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date	x N A x N A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	x N A

IV. O&M COSTS																																																													
1.	O&M Organization <input type="checkbox"/> State in-house <input type="checkbox"/> Contractor for State <input type="checkbox"/> PRP in-house <input type="checkbox"/> Contractor for PRP <input type="checkbox"/> Federal Facility in-house <input type="checkbox"/> Contractor for Federal Facility x Other: <u>Site O&M is the responsibility of the City of Childersburg, Alabama as required by the transfer documents</u>																																																												
2.	O&M Cost Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> Funding mechanism agreement in place Original O&M cost estimate: <u>N A</u> <input type="checkbox"/> Breakdown attached <div style="text-align: center;">Total annual cost by year for review period if available</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">From _____</td> <td style="width: 10%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 20%;"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> <td></td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> <td></td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> <td></td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> <td></td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> <td></td> <td></td> </tr> </table>	From _____	To _____				<input type="checkbox"/> Breakdown attached	Date	Date	Total cost				From _____	To _____				<input type="checkbox"/> Breakdown attached	Date	Date	Total cost				From _____	To _____				<input type="checkbox"/> Breakdown attached	Date	Date	Total cost				From _____	To _____				<input type="checkbox"/> Breakdown attached	Date	Date	Total cost				From _____	To _____				<input type="checkbox"/> Breakdown attached	Date	Date	Total cost			
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3.	Unanticipated or Unusually High O&M Costs During Review Period Describe costs and reasons: <u>N A</u> _____ _____ _____ _____ _____																																																												
V. ACCESS AND INSTITUTIONAL CONTROLS x Applicable <input type="checkbox"/> N A																																																													
A. Fencing																																																													
1.	Fencing damaged <input type="checkbox"/> Location shown on site map x Gates secured <input type="checkbox"/> N A Remarks: <u>Fencing at the Study Area 22 Landfill showed area of minor damage, but none that affect the security imposed by the fencing.</u>																																																												
B. Other Access Restrictions																																																													
1.	Signs and other security measures <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N A Remarks: <u>A "No Trespassing" sign is posted at the entrance to ALAAP – Area B. Warning signs are posted around the landfills as required by the LUCIP.</u>																																																												

C. Institutional Controls (ICs)			
1.	Implementation and enforcement Site conditions imply ICs not properly implemented <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N A Site conditions imply ICs not being fully enforced <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N A Type of monitoring (e.g., self-reporting, drive by): <u>Self-reporting</u> Frequency : <u>Whenever an excavation plan is submitted.</u> Responsible party agency: <u>City of Childersburg, Alabama</u> Contact: <u>Ken Wesson</u> <u>Mayor</u> <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 10%;"> Name Title Date Phone no. </div>		
	Reporting is up-to-date <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N A Reports are verified by the lead agency <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N A Specific requirements in deed or decision documents have been met <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N A Violations have been reported <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N A Other problems or suggestions: <input type="checkbox"/> Report attached <u>Note: There have been no violations to report.</u> _____ _____ _____ _____		
2.	Adequacy <input checked="" type="checkbox"/> ICs are adequate <input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N A Remarks: <u>ICs (LUCs) are selected in the OU-7 ROD. A LUCIP has been prepared and implemented.</u> _____		
D. General			
1.	Vandalism/trespassing <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No vandalism evident Remarks: <u>The Childersburg police and the ADEM game warden have noted occasions of persons attempting to trespass to illegally hunt deer on the property. The police and warden regularly patrol the property to deter this.</u> _____		
2.	Land use changes on site <input checked="" type="checkbox"/> N A Remarks _____ _____		
3.	Land use changes off site <input checked="" type="checkbox"/> N A Remarks _____ _____		
VI. GENERAL SITE CONDITIONS			
A. Roads <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N A			
1.	Roads damaged <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Roads adequate <input type="checkbox"/> N A Remarks _____ _____		

B. Other Site Conditions			
Remarks: <u>None</u>			
VII. LANDFILL COVERS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N A			
A. Landfill Surface			
1.	Settlement (Low spots) Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input checked="" type="checkbox"/> Settlement not evident
2.	Cracks Lengths _____ Remarks _____	<input type="checkbox"/> Location shown on site map Widths _____ Depths _____	<input checked="" type="checkbox"/> Cracking not evident
3.	Erosion Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input checked="" type="checkbox"/> Erosion not evident
4.	Holes Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input checked="" type="checkbox"/> Holes not evident
5.	Vegetative Cover <input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> Cover properly established <input checked="" type="checkbox"/> No signs of stress <input type="checkbox"/> Trees Shrubs (indicate size and locations on a diagram) Remarks <u>See Site Inspection Photographs.</u>		
6.	Alternative Cover (armored rock, concrete, etc.) <input checked="" type="checkbox"/> N A Remarks _____		
7.	Bulges Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Height _____	<input checked="" type="checkbox"/> Bulges not evident

8.	Wet Areas/Water Damage <input type="checkbox"/> Wet areas <input type="checkbox"/> Ponding <input type="checkbox"/> Seeps <input type="checkbox"/> Soft subgrade Remarks _____	<input checked="" type="checkbox"/> Wet areas water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____
9.	Slope Instability <input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map Areal extent _____ Remarks _____	<input checked="" type="checkbox"/> No evidence of slope instability
B. Benches <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)		
1.	Flows Bypass Bench Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N A or okay
2.	Bench Breached Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N A or okay
3.	Bench Overtopped Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N A or okay
C. Letdown Channels <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)		
1.	Settlement Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of settlement Depth _____
2.	Material Degradation Material type _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation Areal extent _____
3.	Erosion Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion Depth _____

4.	Undercutting <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of undercutting Areal extent _____ Depth _____ Remarks _____ _____
5.	Obstructions Type _____ <input type="checkbox"/> No obstructions <input type="checkbox"/> Location shown on site map Areal extent _____ Size _____ Remarks _____ _____
6.	Excessive Vegetative Growth Type _____ <input type="checkbox"/> No evidence of excessive growth <input type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on site map Areal extent _____ Remarks: Some woody growth in small areas around the Asbestos Repository _____ _____
D. Cover Penetrations <input type="checkbox"/> Applicable x N A	
1.	Gas Vents <input type="checkbox"/> Active <input type="checkbox"/> Passive <input type="checkbox"/> Properly secured locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N A Remarks _____ _____
2.	Gas Monitoring Probes <input type="checkbox"/> Properly secured locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N A Remarks _____ _____
3.	Monitoring Wells (within surface area of landfill) <input type="checkbox"/> Properly secured locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N A Remarks _____ _____
4.	Leachate Extraction Wells <input type="checkbox"/> Properly secured locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N A Remarks _____ _____
5.	Settlement Monuments <input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed <input type="checkbox"/> N A Remarks _____ _____

E. Gas Collection and Treatment <input type="checkbox"/> Applicable x N A		
1.	Gas Treatment Facilities <input type="checkbox"/> Flaring <input type="checkbox"/> Thermal destruction <input type="checkbox"/> Collection for reuse <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
2.	Gas Collection Wells, Manifolds and Piping <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings) <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N A Remarks _____ _____	
F. Cover Drainage Layer <input type="checkbox"/> Applicable x N A		
1.	Outlet Pipes Inspected <input type="checkbox"/> Functioning <input type="checkbox"/> N A Remarks _____ _____	
2.	Outlet Rock Inspected <input type="checkbox"/> Functioning <input type="checkbox"/> N A Remarks _____ _____	
G. Detention/Sedimentation Ponds <input type="checkbox"/> Applicable x N A		
1.	Siltation Areal extent _____ Depth _____ <input type="checkbox"/> N A <input type="checkbox"/> Siltation not evident Remarks _____ _____	
2.	Erosion Areal extent _____ Depth _____ <input type="checkbox"/> Erosion not evident <input type="checkbox"/> N A Remarks _____ _____	
3.	Outlet Works <input type="checkbox"/> Functioning <input type="checkbox"/> N A Remarks _____ _____	
4.	Dam <input type="checkbox"/> Functioning <input type="checkbox"/> N A Remarks _____ _____	

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement _____	Vertical displacement _____	
	Rotational displacement _____		
	Remarks _____		
2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks _____		
I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent _____	Depth _____	
	Remarks _____		
2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent _____	Type _____	
	Remarks _____		
3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent _____	Depth _____	
	Remarks _____		
4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N A
	Remarks _____		
VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent _____	Depth _____	
	Remarks _____		
2.	Performance Monitoring	Type of monitoring _____	
	<input type="checkbox"/> Performance not monitored		
	Frequency _____	<input type="checkbox"/> Evidence of breaching	
	Head differential _____		
	Remarks _____		

IX. GROUNDWATER/SURFACE WATER REMEDIES		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N A
A. Groundwater Extraction Wells, Pumps, and Pipelines		<input type="checkbox"/> Applicable	<input type="checkbox"/> N A
1.	Pumps, Wellhead Plumbing, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N A Remarks _____ _____ _____		
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____		
B. Surface Water Collection Structures, Pumps, and Pipelines		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N A
1.	Collection Structures, Pumps, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____		

C. Treatment System		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N A
1.	Treatment Train (Check components that apply) <input type="checkbox"/> Metals removal <input type="checkbox"/> Oil water separation <input type="checkbox"/> Bioremediation <input type="checkbox"/> Air stripping <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Filters _____ <input type="checkbox"/> Additive (e.g., chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually _____ <input type="checkbox"/> Quantity of surface water treated annually _____ Remarks _____ _____		
2.	Electrical Enclosures and Panels (properly rated and functional) <input type="checkbox"/> N A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
3.	Tanks, Vaults, Storage Vessels <input type="checkbox"/> N A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
5.	Treatment Building(s) <input type="checkbox"/> N A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input type="checkbox"/> Chemicals and equipment properly stored Remarks _____ _____		
6.	Monitoring Wells (pump and treatment remedy) <input type="checkbox"/> Properly secured locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N A Remarks _____ _____		
D. Monitoring Data		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N A
1.	Monitoring Data <input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality		
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining		

D. Monitored Natural Attenuation <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N A			
1.	Monitoring Wells (natural attenuation remedy) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N A Remarks _____ _____		
X. OTHER REMEDIES			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A. Implementation of the Remedy			
<p>Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).</p> <p><u>The purpose of this inspection was to assess the conditions of the Study Area 22 Landfill and to obtain an indication if institutional controls, contained with the LUCIP, are being followed.</u></p> <p><u>The landfill was found to be in generally good condition with a well-established cover. No evidence of significant erosion, rilling, slumping, etc., was observed that might question the integrity of the cover. The landfill is fenced and locked. Although some fencing damage was observed at the landfill, the overall integrity of the fencing is intact.</u></p> <p><u>The LUCIP stipulates an industrial use for the property. Parcels of the property that have been sold by the City are in industrial use.</u></p>			
B. Adequacy of O&M			
<p>Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.</p> <p><u>The landfill was found to be in generally good condition with a well-established cover. No evidence of significant erosion, rilling, slumping, etc., was observed that might question the integrity of the cover. The landfill is fenced and locked. Although some fencing damage was observed at the landfill, the overall integrity of the fencing is intact. This minor issue does not affect the long-term protectiveness of the remedy.</u></p>			

C.	Early Indicators of Potential Remedy Problems
Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.	
No early indicators of potential remedy problems were identified. _____ _____	
D.	Opportunities for Optimization
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.	
No opportunities for optimization were identified. _____ _____	

Photographs



Condition of Study Area 22 Landfill Cap Looking Northeast



Damaged Fence Components at the Study Area 22 Landfill Looking West



Locked Gate Leading into the Study Area 22 Landfill Looking North

ATTACHMENT F

BLOOD LEAD MODEL CALCULATIONS FOR SOUTH GEORGIA ROAD DUMP

Adult Lead Model Industrial Worker Cleanup Goal Calculation for Soil at South Georgia Road Dump
U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Alabama Army Ammunition Plant - Area B

Version date 06/14/2017

EDIT RED CELLS

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 2009-2014
$PbB_{fetal, 0.95}$	Target PbB in fetus (e.g., 2-8 $\mu\text{g}/\text{dL}$)	$\mu\text{g}/\text{dL}$	5
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	$\mu\text{g}/\text{dL}$ per $\mu\text{g}/\text{day}$	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	$\mu\text{g}/\text{dL}$	0.6
IR_s	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
$AF_{s, d}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{s, d}$	Exposure frequency (same for soil and dust)	days/yr	219
$AT_{s, d}$	Averaging time (same for soil and dust)	days/yr	365
PRG in Soil for no more than 5% probability that fetal PbB exceeds target PbB		ppm	1,050

ATTACHMENT G

**EPA AND ADEM COMMENTS ON DRAFT FOURTH FIVE YEAR REVIEW AND
ARMY RESPONSE**



Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

April 25, 2018

CERTIFIED MAIL # 91 7199 9991 7038 0610 9105

Mr. Andy Van Dyke
Reserve, Industrial, and Medical Branch
Department of the Army
Assistant Chief of Staff for Installation Management (DAIM-ODB)
2530 Crystal Drive, Rm 5050
Arlington, Virginia 22202

RE: **ADEM Review and Comments:** *Draft Fourth Five-Year Report*, dated November 3, 2017
Alabama Army Ammunition Plant (ALAAP) – Area B, Childersburg, AL
DSMOA Fund Code: 1535-223-0449

Dear Mr. Van Dyke:

The Alabama Department of Environmental Management (ADEM or the Department) has reviewed the *Draft Fourth Five-Year Review Report* for operable unit (OU)-7 at the Alabama Army Ammunition Plant (ALAAP) dated November 2017. Based upon the review, the Department has provided comments in the enclosed document. Please ensure these comments are addressed in the Final version of this report.

If any questions or concerns should arise regarding this matter, please contact Alex Recker of the Facilities Engineering Section, Governmental Hazardous Waste Branch at (334) 270-5636 or by email at alex.recker@adem.alabama.gov.

Sincerely,

Jason Wilson, Chief
Governmental Hazardous Waste Branch
Land Division

JW/RDA/AR/tlp

Enclosure

Cc (via email) Melissa L. Shirley, USACE Bob Beacham, USACE
Tim Woolheater, EPA Ashley Mastin, ADEM
Ben Bentkowski, EPA



ADEM Review Comments
Draft Fourth Five-Year Review Report for Operable Unit (OU)-7
Alabama Army Ammunition Plant
Childersburg, Alabama
April 25, 2018

1. **Section 2.2.1:** The sixth bullet point states the Nonhazardous Waste Landfill (NHWL) was to be closed in accordance with the “existing approved permit application.” The section further discusses the discrepancies between the Army’s copy of the permit application with the referenced permit application in the Operable Unit (OU)-2 Interim Record of Decision (IROD). It should be noted that it is unclear if the referenced permit was ever issued. Furthermore, the NHWL is part of an ongoing dispute in regards to the groundwater monitoring requirements. Please revise this bullet point to reflect these issues.
2. **Section 6:** The table states that the ACM located on site does not affect current protectiveness. However, there has been unauthorized dirt work observed in areas known to be contaminated therefore, it is unclear whether or not the current remedies are protective.



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

REPLY TO
ATTENTION OF

Base Realignment and Closure Division

MAY 23 2018

Mr. Jason Wilson
Alabama Division of Environmental Management (ADEM)
Government Hazardous Waste Branch, Land Division
P.O. Box 301463
Montgomery, AL 36130-1463

SUBJECT: Army response to ADEM comments on the *Draft Fourth Five-Year Review Report* for the Alabama Army Ammunition Plant – Area B, 3 November 2017

Mr. Wilson:

Thank you for providing ADEM comments on the *Draft Fourth Five Year Review* for the Alabama Army Ammunition Plant – Area B. Army responses to the ADEM comments are attached.

Sincerely,



Andrew Van Dyke
Program Manager
Army BRAC Office

Copies Furnished:
Caroline Freeman, EPA
James Briggs, BRAC
Alex Recker, ADEM
Tim Woolheater, USEPA
Melissa Shirley, USACE
Susan Ryan, ELD
Heather Elliott, BRAC

Enclosure: Army Responses to ADEM Comments on the *Draft Fourth Five Year Review* for the Alabama Army Ammunition Plant – Area B

Responses to Comments
Alabama Department of Environmental Management
Technical Review of the Draft Fourth Five Year Review
Alabama Army Ammunition Plant – Area B
Dated April 25, 2018

Comment ID	ADEM Comment – April 25, 2018	Army Response – May 21, 2018	Addressed in the Draft Final FYR (Y/N/P)
	GENERAL COMMENTS		
1.	<p>Section 2.2.1. The sixth bullet point states that the Nonhazardous Waste Landfill (NHWL) was to be closed in accordance with the “existing approved permit application.” The section further discusses the discrepancies between the Army’s copy of the permit application with the referenced permit application in the Operable Unit (OU-2) Interim Record of Decision (IROD). It should be noted that it is unclear if the referenced permit was ever issued. Furthermore, the NHWL is part of an ongoing dispute in regards to the groundwater monitoring requirements. Please revise this bullet point to reflect these issues.</p>	<p>Not applicable – This language is taken directly from the final IROD describing the remedy and indicates that the permit application was approved.</p> <p>The first sentence of the sixth bullet will not be changed. EPA’s February 1992 Permit Equivalency Guidance states, “CERCLA response actions are exempted by law from the requirement to obtain Federal, State or local permits related to any activities conducted completely on-site.” In a May 1992 letter, ADEM stated they “will not insist upon the issuance of state environmental permits for remedial activities conducted at the site, although we would encourage the Army to apply for appropriate permits in order to ensure that all substantive requirements are met.” At that time, Superfund sites provided compliance with substantive provisions of otherwise applicable permits by going through the permitting process. Following Army’s submission and ADEM agreement with the information in the permit application, ADEM determined that a permit was not needed for this CERCLA remedy so a permit was not issued nor was there a formal approval letter.</p> <p>Note that these documents were titled “permit application” but this title is a misnomer. The documents should have simply been called “work plans” because a permit was not required for the onsite disposal area since it was a part of the CERCLA response action. The Army still participated in the “permit application” process in order to facilitate coordination and consultation with the State and to meet all of the substantive requirements of the permitting regulations that were ARARs. In doing so, the Army chose to call the documents “permit applications”, which has caused confusion since that time, since permits were not required and the State agency had no mechanism to approve permits that were not required. In hindsight, had the documents simply been called “work plans”, there would not continue to exist the erroneous notion that the Army submitted a permit application that was not approved by the State.</p> <p>The second portion of the sixth bullet that attempts to clarify the discrepancy in dates of the Final version of the permit application will be deleted, as the text just causes more confusion.</p> <p>In the permit application process, groundwater monitoring was considered, but ADEM determined that it was not necessary and therefore, it was not required. Groundwater monitoring was not included in the final documents that outlined the requirements for the</p>	N

Responses to Comments
Alabama Department of Environmental Management
Technical Review of the Draft Fourth Five Year Review
Alabama Army Ammunition Plant – Area B
Dated April 25, 2018

Comment ID	ADEM Comment – April 25, 2018	Army Response – May 21, 2018	Addressed in the Draft Final FYR (Y/N/P)
		<p>NHWL.</p> <p>A summary of the informal dispute issues will not be included in the document. To avoid complicating the five year review report beyond the purpose or intent of subpart 300.430(f)(4)(ii) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), the procedures provided in the DERP DoDM allows for the use of discretion when replying to comments that do not pertain to remedy protectiveness, and reinforces the requirement that the five year review report should only address those sites for which remedial actions have been taken that result in hazardous substances, pollutants or contaminants remaining at the site above levels allowing for unlimited use and unrestricted exposure (UU/UE). As such, ADEM comments related to the informal dispute and to the NHWL informal dispute will not be incorporated into this document.</p>	
2.	<p>Section 6. The table states that the ACM located on site does not affect current protectiveness. However, there has been unauthorized dirt work observed in areas known to be contaminated therefore, it is unclear whether or not the current remedies are protective.</p>	<p>Concur – This table will be updated to reflect current status of ACM removal.</p> <p>Regarding unauthorized dirt work observed in Area B, the OU-7 ROD does not prohibit excavation, digging, drilling or other activities within Area B, other than at Study Area 22 – Demolition Landfill. No excavation, digging, or drilling has occurred at Study Area 22.</p> <p>In addition, the OU-7 ROD prohibits future residential use of the study areas; however, commercial and industrial use is acceptable within ALAAP – Area B.</p>	Y



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET, S.W.
ATLANTA, GEORGIA 30303

February 27, 2018

Electronic Mail – in lieu of controlled correspondence.

4SD-RSB

Mr. Andrew Van Dyke
Army Program Manager
Operations Army Medical Branch
Department of the Army
Assistant Chief of Staff for Installation Management
Taylor Building, Room 5000
2530 Crystal Drive
Arlington, VA 22202

Dear Mr. Van Dyke:

EPA's has reviewed the Fourth Five Year Review and enclosed comments to the document for use in revising the document. Please prepare a response to comments prior to the draft final version of the document in the prescribed time frame indicated in the Federal Facilities Agreement.

Should you have any questions regarding this letter, please feel free to contact me at 404-562-8510 or woolheater.tim@epa.gov.

Sincerely,

Timothy R Woolheater

Timothy R. Woolheater
Senior Remedial Project Manager
Federal Facilities Branch
Superfund Division

CC: Clark Davis
Alabama Department of Environmental Management
1400 Coliseum Blvd.
Montgomery, AL 36110-2059

Ms. Heather Elliot, BEC
CALIBRE
6354 Walker Lane, Suite 300
Alexandria, Virginia 22310-3252

Melissa L. Shirley
Dept of the Army
Mobile District, Corp of Engineers
Box 2288
Mobile, AL 36628-0001

**EPA Comments on the Draft Fourth Five Year Review
Alabama Army Ammunition Plant
Superfund Site
Talladega County, Alabama
November 2017**

General Comments

1. Throughout the document the site is referred to as the ALAAP – Area B Superfund Site. The NPL site is Alabama Army Ammunition Plant and Area B is only a portion of the site. Referring to the site in this manner does not give the appropriate perspective of the NPL listing. It also adds to the confusion found in the fourth paragraph on page 1-1 where it states incorrectly that the site has five operable units, one of which is OU7 indicating the seven operable units at the site. Revise the document to use the proper site name and list all operable units, using the Introduction to eliminate those which will not be covered in the current Five Year Review.
2. Operable Unit 1 has remaining issues that are under discussion in the current dispute regarding the Non Hazardous Waste Landfill. This being the case, the OU should continue to be part of the Five Year Reviews until this issue is resolved.
3. The document frequently refers to Study Areas and OUs making the document difficult to follow. In order to address this, the document needs a comprehensive table of all Study Areas, NPL Phase Status, the OU (if appropriate), NFA (Y/N), a reference document for the NFA determination (if appropriate), short summary of environmental issues at study area, whether there is a need for 5YR. Please revise the document to include this table.

Specific Comments

1. **Site Background:** Please include current exposure pathways. For example, water use for nearby residents (private wells vs. municipal water supply). Please include similar information for all OUs. This section would also be a good place to introduce the reader to the issue surrounding asbestos.
2. **Five Year Review Summary Form:** There continues to be multiple operable units at the site; however, it is acceptable to use OU7 as the catch all. Area A OUs are still valid and OU7 does not address the groundwater at the site. In addition, the site has not achieved construction completion since the groundwater has yet to be addressed. Finally, the Lead Agency should be the U.S. Army since Mr. VanDyke does not work with the Corps of Engineers. This in no way diminishes the Corps' role in the document development; however, the site is listed of the NPL as specifically a U.S. Army site.
3. **Section 2.1.2, Study Area 2, Pg. 2-1:** This Study Area only gives a cursory discussion with regard to the PAHs at the site. Please add additional information regarding PAHs to give a more comprehensive review of the actions taken to address this COC.
4. **Section 2.1.3, Study Area 3, Pg. 2-1:** The section does not indicate if soils and disposal actions at the Sanitary Landfill were evaluated for the potential to leach to groundwater.

Sanitary landfills typically have requirements for groundwater monitoring. Please indicate if this has been implemented at this site and, if not, give the rationale. If not being implemented, it should be a recommendation.

5. **Section 2.1.4, Study Area 7, Pg. 2-2:** This section indicates that “asbestos was removed to a secure repository.” Based on review of the Army’s Asbestos Investigation Report, Area 7 has been found to have additional areas of asbestos contamination. Please clarify the statement in this section to address this confusion.
6. **Section 2.1.6, Study Area 10W, Pg. 2-3:** The third paragraph mentions that there is considerable uncertainty associated with the tetyl results because little was known concerning the toxicity to wildlife at the time of the report. Please update this statement with current toxicity information regarding tetyl (if any) since this is one of the main purposes of the 5YR.
7. **Section 2.1.12, Study Area 22, Pg. 2-6:** Please indicate if the demolition landfill is being monitored for groundwater quality and, if not, add the rationale for not monitoring.
8. **Section 2.1.15, South Georgia Road Dump, Pg. 2-8:** The last paragraph mentions that the site was not evaluated in the FS; however, there was a need for land use controls. Please indicate the decision document which determined the need for LUCs.
9. **Section 2.1.16, Operable Unit 1, Pg. 2-8:** A summary of the unresolved issues between the FFA parties should be provided. OUI cannot be eliminated from the 5YR until the issues are addressed.
10. **Section 2.1:** An additional section should be provided to give general information regarding asbestos.
11. **Section 2.2:** There is not a clear transition between Section 2.1 and 2.2. Sites that are not addressed in 2.2 should be summarized either at the end of Section 2.1 or at the beginning of Section 2.2. Some of the Study Areas that are not mentioned in the beginning of 2.2 are SA 3, 5, 6, 18 and 20. Please revise the document to address this concern to ensure there is a logical and transparent flow from one section to the next.
12. **Section 2.2.1, Study Area 7, 10, and 21, RAOs and Remedy Components:** The sixth bullet states that the NHL will be closed consistent with “the existing approved permit application.” As you are aware, this issue is part of the dispute that the EPA raised at ALAAP. As EPA has pointed out, since the permit was never issued, the legal requirements for the onsite landfill should have been identified in decision documents that utilized the landfill for disposal of remediation waste. In the meantime, the text in the 5YR could at least state whether the permit application was approved and the date of the approval letter. Please revise the bulleted item to provide a better balance of the issues.
13. **Section 2.2.1, Study Area 7, 10, and 21, RAOs and Remedy Components:** The bulleted list also refers to excavated material that contains asbestos being separated during feed preparation. It should be noted that considerable asbestos material remained at the site unaddressed.
14. **Section 2.2.2, Study Area 2, 10... RAOs and Remedy Components:** The ninth bullet should mention whether the permit application was approved and what is the date of the approval letter. If the permit application was not approved, the 5YR should mention this

and indicate that a modified decision document would be needed to select the permit requirements. Please revise the bulleted item.

15. **Section 2.2.1 and Section 2.2.2:** Each of these sections should mention that the onsite landfill may not have been appropriately selected in the ROD as the standard for construction of this landfill were not included in the decision document. This would introduce one of the reasons the site has yet to achieve remedial action completion through approval of a Remedial Action Completion Report.
16. **Section 2.2.2, Study Area 22, Last two paragraphs:** The paragraphs mention that the standards for the Demolition Landfill are provided in the OU6 remedy. However, the performance standards for OU6 do not appear to cover the standards for an engineered cap. Please revise to indicate where these standards were established or raise it as an issue to be addressed.
17. **Section 2.3, Asbestos:** The remedies in the first two sections did appear to address asbestos in areas where action for other COCs were implemented. However, other areas with asbestos were left behind as cleanup standards for asbestos were not developed in the RODs. Please add this to these sections to further introduce the asbestos concerns raised in subsequent sections.
18. **Table 3.1, Army's Protectiveness Statement, OU1:** The soils from OU1 were stockpiled from Area A and had asbestos in some of them. It is unclear how asbestos was handled though potentially it may be in a similar manner to Area B, where it would appear that only the asbestos that was directly related to a soils action was addressed. In Area B, this left significant amounts from the buildings inappropriately, or not, addressed by the soils actions. Area A will need to be inspected similar to the asbestos inspections completed for Area B. The Five Year Review will need to integrate more background information regarding the asbestos concerns into the logic that leads to the issues recommendations.
19. **Table 3-2, Pg. 3-4, EPA PS #1, 1, 2, 6 and NHL, Current Implementation Status:** There has been no resolution of the dispute regarding the need for ongoing monitoring. The description should reflect the facts related to the overall dispute. Please revise the description and include the following text in both rows, "EPA initiated a dispute regarding the need to perform monitoring at the NHL. This dispute has not yet been resolved." In addition, please enter a completion date. EPA would suggest October 1, 2018.
20. **Table 3-2, Pg. 3-4, EPA PS #4, 1, 2, 6, NHL and Asbestos Landfills, Current Status and Current Implementation Status:** There has been no resolution of the dispute regarding the need to select the NHL as a remedy and to identify its appropriate legal requirements. The description should reflect the facts related to the overall dispute. Please revise the description and include the following text in both rows, "EPA initiated a dispute regarding the need to select the NHL as a remedy component and to identify its appropriate legal requirements. This dispute has not yet been resolved." In addition, please enter a completion date. EPA would suggest October 1, 2018.
21. **Section 4.0:** This section should be updated to include the information regarding asbestos as the Army has been aware of the asbestos issues since the site visit conducted with EPA in June 2016. If any analysis was completed on the types of asbestos this could be added

to the data section. Data can also be considered the visit itself since information was collected on the nature of the issues.

22. **Section 5.1.2, Question A, Remedial Action Performance:** This section states that the NHWL was referred to in historical documents as the onsite disposal area and was selected as a component of the final remedies of the OU-2 and OU-6 IRODs. The selection of the disposal area was incomplete and has been pointed out in numerous communications to the Army and in EPA's initiation of informal dispute. The document should add the ongoing discussion regarding overall protectiveness to this section of the document for a better balance of the issues surrounding the NHWL. Unresolved issues from the Third Five Year Review need to carry through to the current review.
23. **Section 5.2.1, Question B Summary:** This section includes discussion regarding arsenic and 2,4-DNT though does not provide the information for verification of the analysis discussed. Locations of detections, background information, and other supporting data used to make the determinations regarding the summary need to be provided in the appendices. EPA would also request that the information be provided in electronic format to facilitate review of these statements.
24. **Section 6, Issues/Recommendations:** This section needs to carry forward the unresolved issues and recommendations from the Third Five Year Review. Specifically, items 1 and 4 in Table 3-2 under EPA recommendations Presented in a Letter from EPA to the Army Dated September 5, 2013.
25. **Section 6, Table:** The Table is missing the issue category from the 5YR template. Please add the category above the "issues" portion in the current table and provide the needed information. Categories include: Other, Changed Site Conditions, Institutional Controls, Monitoring, Operation and Maintenance, Remedy Performance, Site Access Security. If other is chosen, please provide an explanation in the box. Further references can be found at <https://www.epa.gov/superfund/writing-five-year-reviews-superfund-sites>. The specific information is located on Page 10 of the 2016 FYR Template provided at the link.
26. **Section 6, Table, Currently Protective:** The table indicates that the current protectiveness is not affected. The asbestos on the site may affect current protectiveness since the Army cannot control whether individuals are being exposed at the site. There are land use controls in place in certain areas; though, asbestos was not considered a contaminant at the time. The lack of information regarding the potential for exposure should be clarified in the document in order for the reader to determine why the site is currently protective.
27. **Section 6, Table, Recommendation:** The recommendation is not clearly written as it should indicate the specific steps the Army is planning to take in order to address the issue. They should be listed in relative chronological order in order to resolve the issue. For example, determine the full nature and extent, determine the risk of exposure, and complete a determination regarding the need for action.
28. **Section 6, Table, Milestone Date:** The milestone date needs to be completed to inform the public when to expect an Addendum to the Five Year Review.

29. **Section 7: Protectiveness Statement:** Please add a projected date for resolution of the statement. In addition, include the issues that have yet to be resolved from the Third Review.

Minor Comments

1. **Table 1-1:** Horizontal lines are required between all of the OUs to facilitate the reading of the Notes column of the table.
2. **Study Area 2:** As this document is being developed to be provided to the public, please use ppm or mg/kg when discussing concentration measurements to avoid confusion. Similar documentation occurs throughout the report. Please revise the report to reflect this clarification.
3. **Milestone Dates:** The Milestone Dates (for completing the Recommendations) are tracked in EPA data systems by month day year. Therefore, revise the document's tables to include this format (for each operable unit's section) throughout the Five-Year Review Report.
4. **EPA Protectiveness Statements, Table 3-2:** The EPA recommendation for Area 6 was repeated twice and one should be deleted.
5. **Section 8:** Please add the date for the deadline of the next Five Year Review



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

REPLY TO
ATTENTION OF

Base Realignment and Closure Division

3 May 2018

Mr. Timothy R. Woolheater
United States Environmental Protection Agency, Region 4
61 Forsyth Street, S.W.
Atlanta, GA 30303


SUBJECT: Responses to United States Environmental Protection Agency (EPA) comments on the Draft Fourth Five Year Review for Alabama Army Ammunition Plant – Area B

Dear Mr. Woolheater:

The Army has reviewed EPA comments on the Draft Fourth Five Year Review for the Alabama Army Ammunition Plant – Area B. Responses to the EPA comments are attached.

We note the Department of Defense (DoD) and EPA recognized the need to streamline the five year review process. DoD issued a memorandum dated June 2, 2014, providing an update to the Five-year Review Procedures in the DoD Manual (DoDM) 4715.20, "Defense Environmental Restoration Program (DERP) Management". To avoid complicating the five year review report beyond the purpose or intent of subpart 300.430(f)(4)(ii) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), the procedures provided in the DERP DoDM allow for the use of discretion when replying to EPA comments that do not pertain to remedy protectiveness, and reinforces the requirement that the five year review report should only address those sites for which remedial actions have been taken that result in hazardous substances, pollutants, or contaminants remaining at the site above levels allowing for unlimited use and unrestricted exposure (UU/UE). Based on this guidance, EPA comments related to the informal dispute and to operable units (OUs) other than OU-7 will not be incorporated into the Fourth Five Year Review.

Sincerely,


Andrew Van Dyke
Program Manager
Army BRAC Office

Copies Furnished:

Caroline Freeman, EPA
Alex Recker, ADEM
Daniel Arthur, ADEM
Melissa Shirley, USACE
Sue Ryan, ELD
James Briggs, BRAC
Heather Elliott, BRAC

Enclosure: Army Response to EPA Comments on the Draft Fourth Five Year Review
for the Alabama Army Ammunition Plant – Area B

Responses to Comments
U.S. Environmental Protection Agency
Technical Review of the Draft Fourth Five Year Review
Alabama Army Ammunition Plant – Area B
Dated February 27, 2018

Comment ID	EPA Comment – February 27, 2018	Army Response – May 3, 2018	Addressed in the Draft Final FYR (Y/N/P)
	GENERAL COMMENTS		
1.	Throughout the document the site is referred to as the ALAAP – Area B Superfund Site. The NPL site is Alabama Army Ammunition Plant and Area B is only a portion of the site. Referring to the site in this manner does not give the appropriate perspective of the NPL listing. It also adds to the confusion found in the fourth paragraph on page 1-1 where it states incorrectly that the site has five operable units, one of which is OU7 indicating the seven operable units at the site. Revise the document to use the proper site name and list all operable units, using the Introduction to eliminate those which will not be covered in the current Five Year Review.	Not applicable – not relevant to OU-7 Army indicates ALAAP is an NPL site in the second paragraph of the introduction. This document is the fourth FYR for ALAAP – Area B (as stated in the title). The sites listed on page 1-1 are within Area B as described in the text. This is consistent with how previous FYRs and other CERCLA documents have been prepared for decades.	N
2.	Operable Unit 1 has remaining issues that are under discussion in the current dispute regarding the Non Hazardous Waste Landfill. This being the case, the OU should continue to be part of the Five Year Reviews until this issue is resolved.	Not applicable – not relevant to OU-7 The elimination of OU-1 from this FYR is appropriate as the remedy was implemented and soil is at UU/UE. The removal of OU-1 from the FYR does not alter the informal dispute.	N
3.	The document frequently refers to Study Areas and OUs making the document difficult to follow. In order to address this, the document needs a comprehensive table of all Study Areas, NPL Phase/Status, the OU (if appropriate), NFA (Y/N), a reference document for the NFA determination (if appropriate), short summary of environmental issues at study area, whether there is a need for 5YR. Please revise the document to include this table.	Concur – will incorporate for OU-7	Y
	SPECIFIC COMMENTS		
1.	Site Background: Please include current exposure pathways. For example, water use for nearby residents (private wells vs. municipal water supply). Please include similar information for all OUs. This section would also be a good place to introduce the reader to the issue surrounding asbestos.	Concur – Current exposure pathways will be incorporated for OU-7 Concur – A discussion on asbestos is provided in section 5.3, rather than the site background section.	Y
2.	Five Year Review Summary Form: There continues to be multiple operable units at the site; however, it is acceptable to use OU7 as the catch all. Area A OUs are still valid and OU7 does not address the groundwater at the site. In addition, the site has not achieved construction completion since the	Not applicable – not relevant to OU-7 This document is specifically for areas requiring a FYR as defined in the OU-7 ROD. The Army does not consider OU-7 a catch all.	P

Comment ID	EPA Comment – February 27, 2018	Army Response – May 3, 2018	Addressed in the Draft Final FYR (Y/N/P)
	groundwater has yet to be addressed. Finally, the Lead Agency should be the U.S. Army since Mr. VanDyke does not work with the Corps of Engineers. This in no way diminishes the Corps' role in the document development; however, the site is listed of the NPL as specifically a U.S. Army site.	Concur – Army will update the site status on page 1-7 to "Yes, for OU-7 soils, sediment and surface water. Groundwater is not included in OU-7." Concur – Lead agency will be changed to Army.	
3.	Section 2.1.2, Study Area 2, Pg. 2-1: This Study Area only gives a cursory discussion with regard to the PAHs at the site. Please add additional information regarding PAHs to give a more comprehensive review of the actions taken to address this COC.	Not applicable – See response actions in section 2.2.3 and 2.3.3 for more detail on Study Area 2.	Y
4.	Section 2.1.3, Study Area 3, Pg. 2-1: The section does not indicate if soils and disposal actions at the Sanitary Landfill were evaluated for the potential to leach to groundwater. Sanitary landfills typically have requirements for groundwater monitoring. Please indicate if this has been implemented at this site and, if not, give the rationale. If not being implemented, it should be a recommendation.	Not applicable – not relevant to OU-7 See the FS for additional details on Study Area 3. Groundwater is being handled as a separate OU. Groundwater monitoring wells are located on ALAAP – Area B.	N
5.	Section 2.1.4, Study Area 7, Pg. 2-2: This section indicates that "asbestos was removed to a secure repository." Based on review of the Army's Asbestos Investigation Report, Area 7 has been found to have additional areas of asbestos contamination. Please clarify the statement in this section to address this confusion.	Concur – will be updated	Y
6.	Section 2.1.6, Study Area 10W, Pg. 2-3: The third paragraph mentions that there is considerable uncertainty associated with the tetryl results because little was known concerning the toxicity to wildlife at the time of the report. Please update this statement with current toxicity information regarding tetryl (if any) since this is one of the main purposes of the 5YR.	Not applicable – This is addressed in the last paragraph of Section 2.1.6, SA 10W.	Y
7.	Section 2.1.12, Study Area 22, Pg. 2-6: Please indicate if the demolition landfill is being monitored for groundwater quality and, if not, add the rationale for not monitoring.	Not applicable – not relevant to OU-7 See the FS for additional details on Study Area 22. Groundwater is being handled as a separate OU. Groundwater monitoring wells are located on ALAAP – Area B.	N
8.	Section 2.1.15, South Georgia Road Dump, Pg. 2-8: The last paragraph mentions that the site was not evaluated in the FS; however, there was a need for land use controls. Please	Concur – The OU-7 ROD includes LUCs for the South Georgia Road Dump. This is noted in Table 2-4.	Y

Comment ID	EPA Comment – February 27, 2018	Army Response – May 3, 2018	Addressed in the Draft Final FYR (Y/N/P)
	indicate the decision document which determined the need for LUCs.		
9.	Section 2.1.16, Operable Unit 1, Pg. 2-8: A summary of the unresolved issues between the FFA parties should be provided. OU1 cannot be eliminated from the 5YR until the issues are addressed.	Non-concur –Section 2.1.16 will be removed as OU-1 is it is not relevant to OU-7. The elimination of OU-1 from this FYR is appropriate as the remedy was implemented and soil is at UU/UE. The removal of OU-1 from the FYR does not alter the informal dispute. Non-concur – Army does not believe a summary of the informal dispute is needed in this document.	N
10.	Section 2.1: An additional section should be provided to give general information regarding asbestos.	Concur – Asbestos is discussed in the technical assessment Section 5.3. Section 2 summarizes the response action per the OU-7 ROD evaluated in this FYR.	Y
11.	Section 2.2: There is not a clear transition between Section 2.1 and 2.2. Sites that are not addressed in 2.2 should be summarized either at the end of Section 2.1 or at the beginning of Section 2.2. Some of the Study Areas that are not mentioned in the beginning of 2.2 are SA 3, 5, 6, 18 and 20. Please revise the document to address this concern to ensure there is a logical and transparent flow from one section to the next.	Concur – will be incorporated in Draft Final	Y
12.	Section 2.2.1, Study Area 7, 10, and 21, RAOs and Remedy Components: The sixth bullet states that the NHL will be closed consistent with "the existing approved permit application." As you are aware, this issue is part of the dispute that the EPA raised at ALAAP. As EPA has pointed out, since the permit was never issued, the legal requirements for the onsite landfill should have been identified in decision documents that utilized the landfill for disposal of remediation waste. In the meantime, the text in the 5YR could at least state whether the permit application was approved and the date of the approval letter. Please revise the bulleted item to provide a better balance of the issues.	Not applicable –This language is taken directly from the final IROD describing the remedy and indicates that the permit application was approved. EPA's February 1992 Permit Equivalency Guidance states, "CERCLA response actions are exempted by law from the requirement to obtain Federal, State or local permits related to any activities conducted completely on-site." In a May 1992 letter, ADEM stated they "will not insist upon the issuance of state environmental permits for remedial activities conducted at the site, although we would encourage the Army to apply for appropriate permits in order to ensure that all substantive requirements are met." At that time, Superfund sites provided compliance with substantive provisions of otherwise applicable permits by going through the permitting process. Following Army's submission and ADEM approval of the permit application, ADEM determined that a permit was not needed for this CERCLA remedy so	N

Comment ID	EPA Comment – February 27, 2018	Army Response – May 3, 2018	Addressed in the Draft Final FYR (Y/N/P)
		there is no formal approval letter. Legal requirements were identified in the IRODs and RODs that were approved by all FFA parties.	
13.	Section 2.2.1, Study Area 7, 10, and 21, RAOs and Remedy Components: The bulleted list also refers to excavated material that contains asbestos being separated during feed preparation. It should be noted that considerable asbestos material remained at the site unaddressed.	Not applicable – This language is taken directly from the final IROD describing the remedy. Asbestos is discussed in Section 5.3.	Y
14.	Section 2.2.2, Study Area 2, 10... RAOs and Remedy Components: The ninth bullet should mention whether the permit application was approved and what is the date of the approval letter. If the permit application was not approved, the 5YR should mention this and indicate that a modified decision document would be needed to select the permit requirements. Please revise the bulleted item.	Not Applicable – This section re-states the remedy from the final IROD and refers to the "the existing approved permit applications for treated soils" in the ninth bullet. Non-concur – No reason for a modified decision document. Following Army's submission and ADEM approval of the permit application, ADEM determined that a permit was not needed for this CERCLA remedy so there is no formal approval letter. All FFA parties were involved in the decision making and approved the IROD (also see response to comment #12).	N
15.	Section 2.2.1 and Section 2.2.2: Each of these sections should mention that the onsite landfill may not have been appropriately selected in the ROD as the standards for construction of this landfill were not included in the decision document. This would introduce one of the reasons the site has yet to achieve remedial action completion through approval of a Remedial Action Completion Report.	Not applicable – These sections describe response actions as selected and approved by all FFA parties in the decision documents in 1994 and 1996 IRODs.	N
16.	Section 2.2.2, Study Area 22, Last two paragraphs: The paragraphs mention that the standards for the Demolition Landfill are provided in the OU6 remedy. However, the performance standards for OU6 do not appear to cover the standards for an engineered cap. Please revise to indicate where these standards were established or raise it as an issue to be addressed.	Not applicable – See Section 2.3.2 for additional detail.	Y
17.	Section 2.3, Asbestos: The remedies in the first two sections did appear to address asbestos in areas where action for other COCs were implemented. However, other areas with asbestos were left behind as cleanup standards for asbestos were not developed in the RODs. Please add this to these sections to further introduce the asbestos concerns raised in	Non-concur – Section 2 describes the response actions taken. The newer information on asbestos is addressed in Section 5.3.	N

Comment ID	EPA Comment – February 27, 2018	Army Response – May 3, 2018	Addressed in the Draft Final FYR (Y/N/P)
	subsequent sections.		
18.	Table 3.1, Army's Protectiveness Statement, OU1: The soils from OU1 were stockpiled from Area A and had asbestos in some of them. It is unclear how asbestos was handled though potentially it may be in a similar manner to Area B, where it would appear that only the asbestos that was directly related to a soils action was addressed. In Area B, this left significant amounts from the buildings inappropriately, or not, addressed by the soils actions. Area A will need to be inspected similar to the asbestos inspections completed for Area B. The Five Year Review will need to integrate more background information regarding the asbestos concerns into the logic that leads to the issues/recommendations.	Not applicable - This FYR covers remedies selected in the OU-7 ROD.	N
19.	Table 3-2, Pg. 3-4, EPA PS #1, 1, 2, 6 and NHWL, Current Implementation Status: There has been no resolution of the dispute regarding the need for ongoing monitoring. The description should reflect the facts related to the overall dispute. Please revise the description and include the following text in both rows, "EPA initiated a dispute regarding the need to perform monitoring at the NHWL. This dispute has not yet been resolved." In addition, please enter a completion date. EPA would suggest October 1, 2018.	Concur – Text in current implementation status description column will be updated to add the following: "EPA initiated a dispute regarding the need to perform monitoring at the NHWL. This dispute has not yet been resolved." Non-concur – The Army does not believe a summary of the informal dispute or a date needs to be included in this document. Issues related to the informal dispute do not impact protectiveness.	P
20.	Table 3-2, Pg. 3-4, EPA PS #4, 1, 2, 6, NHWL and Asbestos Landfills, Current Status and Current Implementation Status: There has been no resolution of the dispute regarding the need to select the NHWL as a remedy and to identify its appropriate legal requirements. The description should reflect the facts related to the overall dispute. Please revise the description and include the following text in both rows, "EPA initiated a dispute regarding the need to select the NHWL as a remedy component and to identify its appropriate legal requirements. This dispute has not yet been resolved." In addition, please enter a completion date. EPA would suggest October 1, 2018.	Concur - Text in current implementation status description column will be updated to add the following: "EPA initiated a dispute regarding the need to select the NHWL as a remedy component and to identify its appropriate legal requirements. This dispute has not yet been resolved." Non-concur – The Army does not believe a summary of the informal dispute or a date needs to be included in this document. Issues related to the informal dispute do not impact protectiveness.	P
21.	Section 4.0: This section should be updated to include the information regarding asbestos as the Army has been aware of the asbestos issues since the site visit conducted with EPA in June 2016. If any analysis was completed on the types of asbestos this could be added to the data section. Data can also be considered the visit itself since information was collected on the nature of the issues.	Not applicable – This section is evaluating OU-7. Clarification regarding asbestos is in Section 5.3.	N
22.	Section 5.1.2, Question A, Remedial Action Performance: This section states that the NHWL was referred to in historical	Non-concur – The statement referenced, "The NHWL was referred to in the historical	N

Comment ID	EPA Comment – February 27, 2018	Army Response – May 3, 2018	Addressed in the Draft Final FYR (Y/N/P)
	documents as the onsite disposal area and was selected as a component of the final remedies of the OU-2 and OU-6 IRODs. The selection of the disposal area was incomplete and has been pointed out in numerous communications to the Army and in EPA's initiation of informal dispute. The document should add the ongoing discussion regarding overall protectiveness to this section of the document for a better balance of the issues surrounding the NHL. Unresolved issues from the Third Five Year Review need to carry through to the current review.	documents as the onsite disposal area or backfill area and was selected as a component of the final remedies of the OU-2 and OU-6 IRODs" is accurate. This section is addressing the question in 5.1, "Question A: Is the remedy functioning as intended by the Decision Documents?" EPA has concerns on the selection of the disposal area; however, EPA has not provided any new information that calls into question the protectiveness of the landfill remedy component, and the remedy is functioning as intended in the decision documents.	
23.	Section 5.2.1, Question B Summary: This section includes discussion regarding arsenic and 2,4-DNT though does not provide the information for verification of the analysis discussed. Locations of detections, background information, and other supporting data used to make the determinations regarding the summary need to be provided in the appendices. EPA would also request that the information be provided in electronic format to facilitate review of these statements.	Concur – will be incorporated in Draft Final	Y
24.	Section 6, Issues/Recommendations: This section needs to carry forward the unresolved issues and recommendations from the Third Five Year Review. Specifically, items 1 and 4 in Table 3-2 under EPA recommendations Presented in a Letter from EPA to the Army Dated September 5, 2013.	Non-concur – Table 3-2 outlines the Army's position. The Army does not believe the issues in informal dispute impact protectiveness.	N
25.	Section 6, Table: The Table is missing the issue category from the 5YR template. Please add the category above the "issues" portion in the current table and provide the needed information. Categories include: Other, Changed Site Conditions, Institutional Controls, Monitoring, Operation and Maintenance, Remedy Performance, Site Access/Security. If other is chosen, please provide an explanation in the box. Further references can be found at https://www.epa.gov/superfund/writing-five-year-reviews-superfund-sites . The specific information is located on Page 10 of the 2016 FYR Template provided at the link.	Concur – will be incorporated in Draft Final	Y
26.	Section 6, Table, Currently Protective: The table indicates that the current protectiveness is not affected. The asbestos on the site may affect current protectiveness since the Army cannot control whether individuals are being exposed at the site. There are land use controls in place in certain areas; though, asbestos was not considered a contaminant at the time. The lack of information regarding the potential for exposure should be clarified in the document in order for the reader to determine why the site is currently protective.	Concur – This table will be updated to reflect current status of ACM removal.	Y
27.	Section 6, Table, Recommendation: The recommendation is not clearly written as it should indicate the specific steps the Army is planning to take in order to address the issue. They	Concur – Text will be updated to reflect current status of the ACM removal.	Y

Comment ID	EPA Comment – February 27, 2018	Army Response – May 3, 2018	Addressed in the Draft Final FYR (Y/N/P)
	should be listed in relative chronological order in order to resolve the issue. For example, determine the full nature and extent, determine the risk of exposure, and complete a determination regarding the need for action.		
28.	Section 6, Table, Milestone Date: The milestone date needs to be completed to inform the public when to expect an Addendum to the Five Year Review.	Concur – will be incorporated in the Draft Final document.	Y
29.	Section 7: Protectiveness Statement: Please add a projected date for resolution of the statement. In addition, include the issues that have yet to be resolved from the Third Review.	Concur – projected date will be incorporated in the Draft Final document. Non-concur - Items that are in dispute will not be included here. The Army does not believe the issues in dispute impact the protectiveness of the remedies.	P
	MINOR COMMENTS		
1.	Table 1-1: Horizontal lines are required between all of the OUs to facilitate the reading of the Notes column of the table.	NA – the lines are already included; zoom in on the pdf file and the lines will appear	NA
2.	Study Area 2: As this document is being developed to be provided to the public, please use ppm or mg/kg when discussing concentration measurements to avoid confusion. Similar documentation occurs throughout the report. Please revise the report to reflect this clarification.	Concur – will be incorporated in the Draft Final document.	Y
3.	Milestone Dates: The Milestone Dates (for completing the Recommendations) are tracked in EPA data systems by month/day/year. Therefore, revise the document's tables to include this format (for each operable unit's section) throughout the Five-Year Review Report.	Concur – will be incorporated in the Draft Final document.	Y
4.	EPA Protectiveness Statements, Table 3-2: The EPA recommendation for Area 6 was repeated twice and one should be deleted.	Concur – will be incorporated in the Draft Final document.	Y
5.	Section 8: Please add the date for the deadline of the next Five Year Review	Concur – will be incorporated in the Draft Final document.	Y



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET, S.W.
ATLANTA, GEORGIA 30303

July 7, 2018

Electronic Mail – in lieu of controlled correspondence.

4SD-RSB

Mr. Andrew Van Dyke
Army Program Manager
Operations Army Medical Branch
Department of the Army
Assistant Chief of Staff for Installation Management
Taylor Building, Room 5000
2530 Crystal Drive
Arlington, VA 22202

Dear Mr. Van Dyke:

EPA's has reviewed the Army response to EPA comments on the Fourth Five Year Review and enclosed additional clarification to these comments to the document for use in revising the document. Please revise the document incorporating the comments into the draft final version of the document.

The clarifications are as follows (Note: GC- General Comment; and SC – Specific Comment):

GC#1: The Third 5YR Exec Summary addresses the site overall, then mentions Area A and B, then gives a discussion of the OUs. Only OU3 and OU5 were left out though it could have been included for clarity. EPA is requesting similar language and the inclusion of a sentence or two for the OU3 and OU5 portion of the site. The Army should clarify the document.

GC#2: EPA does not concur that the remedy is UU/UE. Soils were disposed of in a landfill that was not properly selected and subject to dispute. The Army is unilaterally making determinations that aren't agreed to by the regulatory agencies.

SC#2: The Army is not being responsive and it is unclear what the Army will do in response to this comment. The site status needs to be revised to indicate the breadth of

OU's at ALAAP, not just ALAAP – Area B. The entire breadth of the site will relate that the site is not construction complete. The update suggested by the Army is not consistent with the guidance which asks for status of the entire site.

SC#4: The Army is not being fully responsive to the comment. Please indicate whether the leaching of soils waste material to groundwater was addressed.

SC#9: EPA disagrees that OU1 is not relevant to OU 7 as the disposal location is the same as OU2 and 6. The landfill protectiveness is a concern considering there is, for one, no way to determine whether the landfill has affected groundwater.

SC#10: It is not appropriate to wait until Section 5.3 to introduce the asbestos issues that's why EPA made the comment. Please revise this section.

SC#12 and #14: The Army continues to use language that is incorrect which is recognized in the responses as the permit was never approved nor issued by ADEM. The language should be removed. In addition, the legal requirements were insufficiently identified or there wouldn't be a discussion regarding them. For example, if they were sufficiently identified, then groundwater monitoring would have been included or waived through an ARAR waiver.

SC#13: It is hard to imagine how this comment is "not applicable." Despite the language being taken directly from the IROD, it needs to be clarified. Clarification added here supports the decision later in the 5YR document that asbestos still needs to be addressed.

SC#15: These sections also give the status of the implementation at the site. The RACR for the site has yet to be approved because of the issues with the disposal areas and asbestos. The additional of this information gives a better picture of remedy status. Please revise the document.

SC#17: Additional information would provide supporting information regarding the information in Section 5.3.

SC#18: The Army response may demonstrate that OU1 should be part of the Five-Year Review since it was not included as part of OU7. The fact that the asbestos was in the soils and, likely part of buildings in Area A, would indicate the need to verify the asbestos removal in these areas. This should be indicated in the 5YR. Please revise the document.

SC#19: Issues that remain from previous 5YR need to be carried through until completion. Providing a date for the resolution assists in tracking the resolution of the issue. Please revise the date.

SC#20: Issues in dispute at the site do affect the long-term protectiveness of the site. To assist with tracking the issue, a date for resolution needs to be included. Status should be revised to Under Discussion.

SC#21: Section 5.3 is not sufficient. If all OUs have been integrated into OU7, then asbestos would be part of OU7. In fact, it was addressed, if only partially, in site issues

for previous RODs though the remedy was not properly selected in these RODs. Hence the issue raised in the dispute and in Section 5.3 of the 5YR.

SC#22: One issue the EPA has raised is whether the landfill meets the requirements as designated by the ARARs sent to the Army in dispute communications. Without verification that these standards are met, protectiveness cannot be determined. Hence the need to resolve the dispute in order to determine whether the landfill is protective. Please revise the document to address the comment.

SC#24 and #29: The Table 3-2 also presents EPA issues from the 5YR. The issues in dispute relate directly to protectiveness. It is because the site cannot be deemed protective and complete is the reason the RACR has yet to be approved.

Should you have any questions regarding this letter, please feel free to contact me at 404-562-8510 or woolheater.tim@epa.gov.

Sincerely,

Timothy R Woolheater

Timothy R. Woolheater
Senior Remedial Project Manager
Federal Facilities Branch
Superfund Division

CC: Alex Recker
Alabama Department of Environmental Management
1400 Coliseum Blvd.
Montgomery, AL 36110-2059

Ms. Heather Elliot, BEC
CALIBRE
6354 Walker Lane, Suite 300
Alexandria, Virginia 22310-3252

Melissa L. Shirley
Dept of the Army
Mobile District, Corp of Engineers
Box 2288
Mobile, AL 36628-0001



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

REPLY TO
ATTENTION OF

Base Realignment and Closure Division

19 September 2018

Mr. Timothy R. Woolheater
United States Environmental Protection Agency, Region 4
61 Forsyth Street, S.W.
Atlanta, GA 30303

Mr. Alex Recker
Alabama Division of Environmental Management
Government Hazardous Waste Branch, Land Division
P.O. Box 301463
Montgomery, AL 36130-1463

SUBJECT: Final Fourth Five Year Review for Alabama Army Ammunition Plant – Area B and response to EPA’s July 7, 2018 comments

Dear Mr. Woolheater and Mr. Recker:

Please see the attached Final Fourth Five Year Review for the Alabama Army Ammunition Plant – Area B.

The Army reviewed EPA’s clarifying comments, received on 7 July 2018 and issues the following responses.

Where the EPA clarifications illuminated the original comment, received 27 February 2018, the enclosed response describes any revisions to the document to address the comment. However, the majority of the clarifications only reiterated the original comment. The Army provides additional explanations to the original responses but has not revised the document. The Army stands behind our 3 May 2018, responses to EPA’s initial comments. According to EPA’s own guidance, “Comprehensive Five-Year Review Guidance” OSWER 9355.7-03B-P, the purpose of a five year review is to evaluate the implementation and performance of a remedy in order to determine if that remedy is or will be protective of human health and the environment. Five year reviews must only pertain to sites with a remedy in place and all other comments, not relating to the selected remedy and its implementation, are beyond the scope of the review. Per Department of Defense (DoD), described in DoD Manual (DoDM) 4715.20 “Defense Environmental Restoration Program (DERP) Management,” the Army is using discretion in the response to EPA comments that do not pertain to remedy protectiveness. As stated in the DoDM, the five year review report should only address those sites for which remedial actions have been taken that result in hazardous substances, pollutants or contaminants remaining at the site above levels allowing for unlimited use and

unrestricted exposure (UU/UE). The EPA and ADEM comments related to the informal dispute and to operable units (OUs) other than OU-7 are not relevant to this document and are not incorporated.

The Army will continue to discuss items in dispute with EPA and ADEM, and take appropriate steps when consensus is reached on those items. However, the resolution of those items is external to the Fourth Five Year Review and we see no need to unnecessarily delay its completion.

Sincerely,

A handwritten signature in black ink, appearing to read 'Andrew Van Dyke', with a large, stylized flourish at the end.

Andrew Van Dyke
Program Manager
Army BRAC Office

Copies Furnished:

Melissa Shirley, USACE
Susan Ryan, ELD
Heather Elliott, BRAC
Michelle Thornton, EPA
Daniel Arthur, ADEM

Enclosure 1: Final Fourth Five Year Review for the Alabama Army Ammunition Plant – Area B.

Enclosure 2: Army Responses to EPA Comments

Responses to Comments
U.S. Environmental Protection Agency
Technical Review of the Draft Fourth Five Year Review
Alabama Army Ammunition Plant – Area B
Dated February 27, 2018; Additional Comments from EPA Dated July 7, 2018

Comment ID	EPA Comment – February 27, 2018	Army Response – May 3, 2018	Addressed in the Draft Final FYR (Y/N/P)	EPA Additional Comment – July 7, 2018	Army Additional Response – September 19, 2018
	GENERAL COMMENTS				
1.	Throughout the document the site is referred to as the ALAAP – Area B Superfund Site. The NPL site is Alabama Army Ammunition Plant and Area B is only a portion of the site. Referring to the site in this manner does not give the appropriate perspective of the NPL listing. It also adds to the confusion found in the fourth paragraph on page 1-1 where it states incorrectly that the site has five operable units, one of which is OU7 indicating the seven operable units at the site. Revise the document to use the proper site name and list all operable units, using the Introduction to eliminate those which will not be covered in the current Five Year Review.	Not applicable – not relevant to OU-7 Army indicates ALAAP is an NPL site in the second paragraph of the introduction. This document is the fourth FYR for ALAAP – Area B (as stated in the title). The sites listed on page 1-1 are within Area B as described in the text. This is consistent with how previous FYRs and other CERCLA documents have been prepared for decades.	N	The Third 5YR Exec Summary addresses the site overall, then mentions Area A and B, then gives a discussion of the OUs. Only OU3 and OU5 were left out though it could have been included for clarity. EPA is requesting similar language and the inclusion of a sentence or two for the OU3 and OU5 portion of the site. The Army should clarify the document.	The Army will clarify the confusion that exists regarding Area B OU-3 and OU-5 which is related to the differences between the Army OU numbering system and the EPA OU numbering system (EPA did not include the numbers 3 and 5 when they were numbering Operable Units within Area B).
2.	Operable Unit 1 has remaining issues that are under discussion in the current dispute regarding the Non Hazardous Waste Landfill. This being the case, the OU should continue to be part of the Five Year Reviews until this issue is resolved.	Not applicable – not relevant to OU-7 The elimination of OU-1 from this FYR is appropriate as the remedy was implemented and soil is at UU/UE. The removal of OU-1 from the FYR does not alter the informal dispute.	N	EPA does not concur that the remedy is UU/UE. Soils were disposed of in a landfill that was not properly selected and subject to dispute. The Army is unilaterally making determinations that aren't agreed to by the regulatory agencies.	As noted in our Fourth Five Year Review kick-off meeting, information paper, and in accordance with the Five Year Review guidance, the Army has prepared this Five Year Review to address those sites for which remedial actions have been taken that result in hazardous substances, pollutants, or contaminants remaining at the site. The final approved OU-1 ROD states "Long-term protection to the human health and environment will be provided by leaving no residual risk from the contaminants and by reducing or eliminating the impact on the environment." Since NFA was required for OU-1, Five Year Reviews are not required.

Responses to Comments
U.S. Environmental Protection Agency (Continued)
February 27, 2018; Additional Comments from EPA Dated July 7, 2018

Comment ID	EPA Comment – February 27, 2018	Army Response – May 3, 2018	Addressed in the Draft Final FYR (Y/N/P)	EPA Additional Comment – July 7, 2018	Army Additional Response – September 19, 2018
					Because the OU-7 ROD was approved by Army, EPA, and ADEM, the Army is unclear how removal of OU-1 (where there is no Five Year Review requirement) constitutes a unilateral determination not agreed to by EPA and ADEM.
3.	The document frequently refers to Study Areas and OUs making the document difficult to follow. In order to address this, the document needs a comprehensive table of all Study Areas, NPL Phase/Status, the OU (if appropriate), NFA (Y/N), a reference document for the NFA determination (if appropriate), short summary of environmental issues at study area, whether there is a need for 5YR. Please revise the document to include this table.	Concur – will incorporate for OU-7	Y		
	SPECIFIC COMMENTS				
1.	Site Background: Please include current exposure pathways. For example, water use for nearby residents (private wells vs. municipal water supply). Please include similar information for all OUs. This section would also be a good place to introduce the reader to the issue surrounding asbestos.	Concur – Current exposure pathways will be incorporated for OU-7. Concur – A discussion on asbestos is provided in section 5.3, rather than the site background section.	P		No change will be incorporated. As stated in Section 1, groundwater pathways are being evaluated as part of another OU and therefore are not evaluated in this FYR. Exposure pathways for the other OUs can be found in supporting documents listed in the 3 rd paragraph of Section 1.1.
2.	Five Year Review Summary Form: There continues to be multiple operable units at the site; however, it is acceptable to use OU7 as the catch all. Area A OUs are still valid and OU7 does not address the groundwater at the site. In addition, the site has not achieved construction completion since the groundwater has yet to be addressed. Finally, the Lead Agency should be the U.S. Army since Mr. VanDyke does not work with the Corps of Engineers. This in no way diminishes the Corps' role in the document development; however, the site is listed of the NPL as specifically a U.S. Army site.	Not applicable – not relevant to OU-7. This document is specifically for areas requiring a FYR as defined in the OU-7 ROD. The Army does not consider OU-7 a catch all. Concur – Army will update the site status on page 1-7 to “Yes, for OU-7 soils, sediment and surface water. Groundwater is not included in OU-7.” Concur – Lead agency will be changed to Army.	P	The Army is not being responsive and it is unclear what the Army will do in response to this comment. The site status needs to be revised to indicate the breadth of OU's at ALAAP, not just ALAAP – Area B. The entire breadth of the site will relate that the site is not construction complete. The update suggested by the Army is not consistent with the guidance which asks for status of the entire site.	The Army's responses are in line with EPA and DERP guidance for Five Year Reviews. This Five Year Review addresses OU-7. Army will clarify that the groundwater issues are part of a separate operable unit (OU-4) and are not part of the OU-7 Five Year Review. Work is ongoing at OU-4 and there is no remedy to review at this time. The Army does not agree that Area A should be included in the Five Year Review because OU-7 does not include Area A and there is not a requirement for Five Year Reviews for the Area A OUs.

Responses to Comments
U.S. Environmental Protection Agency (Continued)
February 27, 2018; Additional Comments from EPA Dated July 7, 2018

Comment ID	EPA Comment – February 27, 2018	Army Response – May 3, 2018	Addressed in the Draft Final FYR (Y/N/P)	EPA Additional Comment – July 7, 2018	Army Additional Response – September 19, 2018
3.	Section 2.1.2, Study Area 2, Pg. 2-1: This Study Area only gives a cursory discussion with regard to the PAHs at the site. Please add additional information regarding PAHs to give a more comprehensive review of the actions taken to address this COC.	Not applicable – See response actions in section 2.2.3 and 2.3.3 for more detail on Study Area 2.	Y		
4.	Section 2.1.3, Study Area 3, Pg. 2-1: The section does not indicate if soils and disposal actions at the Sanitary Landfill were evaluated for the potential to leach to groundwater. Sanitary landfills typically have requirements for groundwater monitoring. Please indicate if this has been implemented at this site and, if not, give the rationale. If not being implemented, it should be a recommendation.	Not applicable – not relevant to OU-7 See the FS for additional details on Study Area 3. Groundwater is being handled as a separate OU. Groundwater monitoring wells are located on ALAAP – Area B.	N	The Army is not being fully responsive to the comment. Please indicate whether the leaching of soils/waste material to groundwater was addressed.	The leaching of soils/waste material to groundwater was addressed by collecting groundwater samples across Area B (including Study Area 3) and evaluating the data in the RI and risk assessment. The groundwater evaluation was conducted as a site-wide approach rather than for individual study areas. Soils at Study Area 3 were not compared to migration-to-groundwater criteria.
5.	Section 2.1.4, Study Area 7, Pg. 2-2: This section indicates that “asbestos was removed to a secure repository.” Based on review of the Army’s Asbestos Investigation Report, Area 7 has been found to have additional areas of asbestos contamination. Please clarify the statement in this section to address this confusion.	Concur – will be updated	Y		Information related to asbestos contamination will be provided in Section 5.3.
6.	Section 2.1.6, Study Area 10W, Pg. 2-3: The third paragraph mentions that there is considerable uncertainty associated with the tetryl results because little was known concerning the toxicity to wildlife at the time of the report. Please update this statement with current toxicity information regarding tetryl (if any) since this is one of the main purposes of the 5YR.	Not applicable – This is addressed in the last paragraph of Section 2.1.6, SA 10W.	Y		

Responses to Comments
U.S. Environmental Protection Agency (Continued)
February 27, 2018; Additional Comments from EPA Dated July 7, 2018

Comment ID	EPA Comment – February 27, 2018	Army Response – May 3, 2018	Addressed in the Draft Final FYR (Y/N/P)	EPA Additional Comment – July 7, 2018	Army Additional Response – September 19, 2018
7.	Section 2.1.12, Study Area 22, Pg. 2-6: Please indicate if the demolition landfill is being monitored for groundwater quality and, if not, add the rationale for not monitoring.	Not applicable – not relevant to OU-7 See the FS for additional details on Study Area 22. Groundwater is being handled as a separate OU. Groundwater monitoring wells are located on ALAAP – Area B.	N		
8.	Section 2.1.15, South Georgia Road Dump, Pg. 2-8: The last paragraph mentions that the site was not evaluated in the FS; however, there was a need for land use controls. Please indicate the decision document which determined the need for LUCs.	Concur – The OU-7 ROD includes LUCs for the South Georgia Road Dump. This is noted in Table 2-4.	Y		
9.	Section 2.1.16, Operable Unit 1, Pg. 2-8: A summary of the unresolved issues between the FFA parties should be provided. OU1 cannot be eliminated from the 5YR until the issues are addressed.	Non-concur – Section 2.1.16 will be removed as OU-1 as it is not relevant to OU-7. The elimination of OU-1 from this FYR is appropriate as the remedy was implemented and soil is at UU/UE. The removal of OU-1 from the FYR does not alter the informal dispute. Non-concur – Army does not believe a summary of the informal dispute is needed in this document.	N	EPA disagrees that OU1 is not relevant to OU 7 as the disposal location is the same as OU2 and 6. The landfill protectiveness is a concern considering there is, for one, no way to determine whether the landfill has affected groundwater.	As noted in our Fourth Five Year Review kick-off meeting, information paper, and in accordance with the Five Year Review guidance, the Army has prepared this Five Year Review to address those sites for which remedial actions have been taken that result in hazardous substances, pollutants, or contaminants remaining at the site. The final approved OU-1 ROD states “Long-term protection to the human health and environment will be provided by leaving no residual risk from the contaminants and by reducing or eliminating the impact on the environment.” Since NFA was required for OU-1, Five Year Reviews are not required.
10.	Section 2.1: An additional section should be provided to give general information regarding asbestos.	Concur – Asbestos is discussed in the technical assessment Section 5.3. Section 2 summarizes the response action per the OU-7 ROD evaluated in this FYR.	Y	It is not appropriate to wait until Section 5.3 to introduce the asbestos issues that’s why EPA made the comment. Please revise this section.	The Army disagrees. Section 2 summarizes the response actions per the OU-7 ROD. New information will be included in Section 5.3.

Responses to Comments
U.S. Environmental Protection Agency (Continued)
February 27, 2018; Additional Comments from EPA Dated July 7, 2018

Comment ID	EPA Comment – February 27, 2018	Army Response – May 3, 2018	Addressed in the Draft Final FYR (Y/N/P)	EPA Additional Comment – July 7, 2018	Army Additional Response – September 19, 2018
11.	Section 2.2: There is not a clear transition between Section 2.1 and 2.2. Sites that are not addressed in 2.2 should be summarized either at the end of Section 2.1 or at the beginning of Section 2.2. Some of the Study Areas that are not mentioned in the beginning of 2.2 are SA 3, 5, 6, 18 and 20. Please revise the document to address this concern to ensure there is a logical and transparent flow from one section to the next.	Concur – will be incorporated in Draft Final	Y		Text will be revised in Sections 1, 2.1, and 2.2 to clarify the status of the OU-7 study areas.
12.	Section 2.2.1, Study Area 7, 10, and 21, RAOs and Remedy Components: The sixth bullet states that the NHL will be closed consistent with “the existing approved permit application.” As you are aware, this issue is part of the dispute that the EPA raised at ALAAP. As EPA has pointed out, since the permit was never issued, the legal requirements for the onsite landfill should have been identified in decision documents that utilized the landfill for disposal of remediation waste. In the meantime, the text in the 5YR could at least state whether the permit application was approved and the date of the approval letter. Please revise the bulleted item to provide a better balance of the issues.	Not applicable –This language is taken directly from the final IROD describing the remedy and indicates that the permit application was approved. EPA’s February 1992 Permit Equivalency Guidance states, “CERCLA response actions are exempted by law from the requirement to obtain Federal, State or local permits related to any activities conducted completely on-site.” In a May 1992 letter, ADEM stated they “will not insist upon the issuance of state environmental permits for remedial activities conducted at the site, although we would encourage the Army to apply for appropriate permits in order to ensure that all substantive requirements are met.” At that time, Superfund sites provided compliance with substantive provisions of otherwise applicable permits by going through the permitting process. Following Army’s submission and ADEM approval of the permit application, ADEM determined that a permit was not needed for this CERCLA remedy so there is no formal approval letter. Legal requirements were identified in the IRODs and RODs that were approved by all FFA parties.	N	The Army continues to use language that is incorrect which is recognized in the responses as the permit was never approved nor issued by ADEM. The language should be removed. In addition, the legal requirements were insufficiently identified or there wouldn’t be a discussion regarding them. For example, if they were sufficiently identified, then groundwater monitoring would have been included or waived through an ARAR waiver.	The Army understands EPA no longer agrees with the language and legal requirements approved in the final IRODs and RODs dated November 1994, March 1997, and March 2012. The Army’s position on the NHL is documented in several responses to EPA, most recently in our 12 July 2018 letter, SUBJECT: Informal Dispute at the former Alabama Army Ammunition Plant.

Responses to Comments
U.S. Environmental Protection Agency (Continued)
February 27, 2018; Additional Comments from EPA Dated July 7, 2018

Comment ID	EPA Comment – February 27, 2018	Army Response – May 3, 2018	Addressed in the Draft Final FYR (Y/N/P)	EPA Additional Comment – July 7, 2018	Army Additional Response – September 19, 2018
13.	Section 2.2.1, Study Area 7, 10, and 21, RAOs and Remedy Components: The bulleted list also refers to excavated material that contains asbestos being separated during feed preparation. It should be noted that considerable asbestos material remained at the site unaddressed.	Not applicable – This language is taken directly from the final IROD describing the remedy. Asbestos is discussed in Section 5.3.	Y	It is hard to imagine how this comment is “not applicable.” Despite the language being taken directly from the IROD, it needs to be clarified. Clarification added here supports the decision later in the 5YR document that asbestos still needs to be addressed.	The Army disagrees. Section 2 summarizes the response actions by quoting the November 1994 IROD. The response actions are further documented in the March 2012 OU-7 ROD. Asbestos is included in Section 5.3.
14.	Section 2.2.2, Study Area 2, 10... RAOs and Remedy Components: The ninth bullet should mention whether the permit application was approved and what is the date of the approval letter. If the permit application was not approved, the 5YR should mention this and indicate that a modified decision document would be needed to select the permit requirements. Please revise the bulleted item.	Not Applicable – This section re-states the remedy from the final IROD and refers to the “the existing approved permit applications for treated soils” in the ninth bullet. Non-concur – No reason for a modified decision document. Following Army’s submission and ADEM approval of the permit application, ADEM determined that a permit was not needed for this CERCLA remedy so there is no formal approval letter. All FFA parties were involved in the decision making and approved the IROD (also see response to comment #12).	N	The Army continues to use language that is incorrect which is recognized in the responses as the permit was never approved nor issued by ADEM. The language should be removed. In addition, the legal requirements were insufficiently identified or there wouldn’t be a discussion regarding them. For example, if they were sufficiently identified, then groundwater monitoring would have been included or waived through an ARAR waiver.	The IROD says specifically “.....in accordance with the existing approved permit applications for treated soils....” (see page 11 of 43 of the pdf file of the IROD). The Army stands by the language that came directly from the IROD. The Army understands EPA no longer agrees with the language and legal requirements approved in the final IRODs and RODs dated November 1994, March 1997, and March 2012. The Army’s position on the NHWL is documented in several responses to EPA, most recently in our 12 July 2018 letter, Subject: Informal Dispute at the former Alabama Army Ammunition Plant.
15.	Section 2.2.1 and Section 2.2.2: Each of these sections should mention that the onsite landfill may not have been appropriately selected in the ROD as the standards for construction of this landfill were not included in the decision document. This would introduce one of the reasons the site has yet to achieve remedial action completion through approval of a Remedial Action Completion Report.	Not applicable – These sections describe response actions as selected and approved by all FFA parties in the decision documents in 1994 and 1996 IRODs.	N	These sections also give the status of the implementation at the site. The RACR for the site has yet to be approved because of the issues with the disposal areas and asbestos. The additional of this information gives a better picture of remedy status. Please revise the document.	The Army does not agree that the landfill was inappropriately selected and the Army’s position is documented. These sections contain the required information which are the RAOs and remedy components for the two IRODs. The language was taken directly from the IRODs.

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16.	Section 2.2.2, Study Area 22, Last two paragraphs: The paragraphs mention that the standards for the Demolition Landfill are provided in the OU6 remedy. However, the performance standards for OU6 do not appear to cover the standards for an engineered cap. Please revise to indicate where these standards were established or raise it as an issue to be addressed.	Not applicable – See Section 2.3.2 for additional detail.	Y		
17.	Section 2.3, Asbestos: The remedies in the first two sections did appear to address asbestos in areas where action for other COCs were implemented. However, other areas with asbestos were left behind as cleanup standards for asbestos were not developed in the RODs. Please add this to these sections to further introduce the asbestos concerns raised in subsequent sections.	Non-concur – Section 2 describes the response actions taken. The newer information on asbestos is addressed in Section 5.3.	N	Additional information would provide supporting information regarding the information in Section 5.3.	The Army disagrees. Section 2 summarizes the response actions per the OU-7 ROD. New information on asbestos will be included in Section 5.3.
18.	Table 3.1, Army's Protectiveness Statement, OU1: The soils from OU1 were stockpiled from Area A and had asbestos in some of them. It is unclear how asbestos was handled though potentially it may be in a similar manner to Area B, where it would appear that only the asbestos that was directly related to a soils action was addressed. In Area B, this left significant amounts from the buildings inappropriately, or not, addressed by the soils actions. Area A will need to be inspected similar to the asbestos inspections completed for Area B. The Five Year Review will need to integrate more background information regarding the asbestos concerns into the logic that leads to the issues/recommendations.	Not applicable – This FYR covers remedies selected in the OU-7 ROD.	N	The Army response may demonstrate that OU1 should be part of the Five-Year Review since it was not included as part of OU7. The fact that the asbestos was in the soils and, likely part of buildings in Area A, would indicate the need to verify the asbestos removal in these areas. This should be indicated in the 5YR. Please revise the document.	The Army does not agree that Area A should be included in the Five Year Review because OU-7 does not include Area A. OU-1 was not included in this Five Year Review because it was documented as NFA in the OU-7 ROD. Information regarding the recent asbestos concerns will be added to Section 5.3.

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19.	Table 3-2, Pg. 3-4, EPA PS #1, 1, 2, 6 and NHWL, Current Implementation Status: There has been no resolution of the dispute regarding the need for ongoing monitoring. The description should reflect the facts related to the overall dispute. Please revise the description and include the following text in both rows, “EPA initiated a dispute regarding the need to perform monitoring at the NHWL. This dispute has not yet been resolved.” In addition, please enter a completion date. EPA would suggest October 1, 2018.	Concur – Text in current implementation status description column will be updated to add the following: “EPA initiated a dispute regarding the need to perform monitoring at the NHWL. This dispute has not yet been resolved.” Non-concur – The Army does not believe a summary of the informal dispute or a date needs to be included in this document. Issues related to the informal dispute do not impact protectiveness.	P	Issues that remain from previous 5YR need to be carried through until completion. Providing a date for the resolution assists in tracking the resolution of the issue. Please revise the date.	It is difficult to add a completion date that is meaningful since the NHWL has been an ongoing topic of informal dispute since the last Five Year Review.
20.	Table 3-2, Pg. 3-4, EPA PS #4, 1, 2, 6, NHWL and Asbestos Landfills, Current Status and Current Implementation Status: There has been no resolution of the dispute regarding the need to select the NHWL as a remedy and to identify its appropriate legal requirements. The description should reflect the facts related to the overall dispute. Please revise the description and include the following text in both rows, “EPA initiated a dispute regarding the need to select the NHWL as a remedy component and to identify its appropriate legal requirements. This dispute has not yet been resolved.” In addition, please enter a completion date. EPA would suggest October 1, 2018.	Concur – Text in current implementation status description column will be updated to add the following: “EPA initiated a dispute regarding the need to select the NHWL as a remedy component and to identify its appropriate legal requirements. This dispute has not yet been resolved.” Non-concur – The Army does not believe a summary of the informal dispute or a date needs to be included in this document. Issues related to the informal dispute do not impact protectiveness.	P	Issues in dispute at the site do affect the long-term protectiveness of the site. To assist with tracking the issue, a date for resolution needs to be included. Status should be revised to Under Discussion.	It is difficult to add a completion date that is meaningful since the NHWL has been an ongoing topic of informal dispute since the last Five Year Review. The Army will keep the current status as “Considered and not implemented” but will add “Under discussion as part of dispute” in the “Status” column.
21.	Section 4.0: This section should be updated to include the information regarding asbestos as the Army has been aware of the asbestos issues since the site visit conducted with EPA in June 2016. If any analysis was completed on the types of asbestos this could be added to the data section. Data can also be considered the visit itself since information was collected on the nature of the issues.	Not applicable – This section is evaluating OU-7. Clarification regarding asbestos is in Section 5.3.	N	Section 5.3 is not sufficient. If all OUs have been integrated into OU7, then asbestos would be part of OU7. In fact, it was addressed, of only partially, in site issues for previous RODs though the remedy was not properly selected in these RODs. Hence the issue raised in the dispute and in Section 5.3 of the 5YR.	The new issues related to asbestos have arisen since the last Five Year Review and data have been collected as part of the Asbestos Inspection and Asbestos Abatement. The Army will include information about these activities in Section 5.3.

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22.	Section 5.1.2, Question A, Remedial Action Performance: This section states that the NHWL was referred to in historical documents as the onsite disposal area and was selected as a component of the final remedies of the OU-2 and OU-6 IRODs. The selection of the disposal area was incomplete and has been pointed out in numerous communications to the Army and in EPA's initiation of informal dispute. The document should add the ongoing discussion regarding overall protectiveness to this section of the document for a better balance of the issues surrounding the NHWL. Unresolved issues from the Third Five Year Review need to carry through to the current review.	Non-concur – The statement referenced, “The NHWL was referred to in the historical documents as the onsite disposal area or backfill area and was selected as a component of the final remedies of the OU-2 and OU-6 IRODs” is accurate. This section is addressing the question in 5.1, “Question A: Is the remedy functioning as intended by the Decision Documents?” EPA has concerns on the selection of the disposal area; however, EPA has not provided any new information that calls into question the protectiveness of the landfill remedy component, and the remedy is functioning as intended in the decision documents.	N	One issue the EPA has raised is whether the landfill meets the requirements as designated by the ARARs sent to the Army in dispute communications. Without verification that these standards are met, protectiveness cannot be determined. Hence the need to resolve the dispute in order to determine whether the landfill is protective. Please revise the document to address the comment.	The Army does not agree. The Army and the regulatory agencies agreed that the NHWL was appropriately selected at the time the IRODs were approved. The issues are in dispute and have not been resolved. The dispute has been acknowledged in Table 3-2.
23.	Section 5.2.1, Question B Summary: This section includes discussion regarding arsenic and 2,4-DNT though does not provide the information for verification of the analysis discussed. Locations of detections, background information, and other supporting data used to make the determinations regarding the summary need to be provided in the appendices. EPA would also request that the information be provided in electronic format to facilitate review of these statements.	Concur – will be incorporated in Draft Final	Y		The summary in the first two paragraphs of Section 5.2.1 is primarily a distillation of the information presented in Table 5-3. The requested information can be found in the 2001 Supplemental RI Report. Note that Table 5-3 is a comparison of exposure point concentrations (EPCs) calculated in the Supplemental RI to industrial RSLs. If the EPC is a maximum detected value, there is an associated sample and map location. If the EPC is a 95%UCL, it represents multiple sample locations. Therefore, it cannot be represented by a single sample and location. The table provided below lists specific sections, figures, and table numbers in the Supplemental RI (SAIC 2001) where the information is presented.
24.	Section 6, Issues/Recommendations: This section needs to carry forward the unresolved issues and recommendations from the Third Five Year Review. Specifically, items 1 and 4 in Table 3-2 under EPA recommendations Presented in a Letter from EPA to the Army Dated September 5, 2013.	Non-concur –Table 3-2 outlines the Army's position. The Army does not believe the issues in informal dispute impact protectiveness.	N	The Table 3-2 also presents EPA issues from the 5YR. The issues in dispute relate directly to protectiveness. It is because the site cannot be deemed protective and complete is the reason the RACR has yet to be approved.	The Army believes the only issue that affects protectiveness is related to asbestos. That issue has been identified in Section 6.

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25.	Section 6, Table: The Table is missing the issue category from the 5YR template. Please add the category above the “issues” portion in the current table and provide the needed information. Categories include: Other, Changed Site Conditions, Institutional Controls, Monitoring, Operation and Maintenance, Remedy Performance, Site Access/Security. If other is chosen, please provide an explanation in the box. Further references can be found at https://www.epa.gov/superfund/writing-five-year-reviews-superfund-sites . The specific information is located on Page 10 of the 2016 FYR Template provided at the link.	Concur – will be incorporated in Draft Final	Y		
26.	Section 6, Table, Currently Protective: The table indicates that the current protectiveness is not affected. The asbestos on the site may affect current protectiveness since the Army cannot control whether individuals are being exposed at the site. There are land use controls in place in certain areas; though, asbestos was not considered a contaminant at the time. The lack of information regarding the potential for exposure should be clarified in the document in order for the reader to determine why the site is currently protective.	Concur – This table will be updated to reflect current status of ACM removal.	Y		
27.	Section 6, Table, Recommendation: The recommendation is not clearly written as it should indicate the specific steps the Army is planning to take in order to address the issue. They should be listed in relative chronological order in order to resolve the issue. For example, determine the full nature and extent, determine the risk of exposure, and complete a determination regarding the need for action.	Concur – Text will be updated to reflect current status of the ACM removal.	Y		

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28.	Section 6, Table, Milestone Date: The milestone date needs to be completed to inform the public when to expect an Addendum to the Five Year Review.	Concur – will be incorporated in the Draft Final document.	Y		
29.	Section 7: Protectiveness Statement: Please add a projected date for resolution of the statement. In addition, include the issues that have yet to be resolved from the Third Review.	Concur – projected date will be incorporated in the Draft Final document. Non-concur - Items that are in dispute will not be included here. The Army does not believe the issues in dispute impact the protectiveness of the remedies.	P	The Table 3-2 also presents EPA issues from the 5YR. The issues in dispute relate directly to protectiveness. It is because the site cannot be deemed protective and complete is the reason the RACR has yet to be approved.	The Army believes the only issue that affects protectiveness is related to asbestos. That issue has been identified in Section 7.
	MINOR COMMENTS				
1.	Table 1-1: Horizontal lines are required between all of the OUs to facilitate the reading of the Notes column of the table.	NA – the lines are already included; zoom in on the pdf file and the lines will appear	NA		
2.	Study Area 2: As this document is being developed to be provided to the public, please use ppm or mg/kg when discussing concentration measurements to avoid confusion. Similar documentation occurs throughout the report. Please revise the report to reflect this clarification.	Concur – will be incorporated in the Draft Final document.	Y		Ppm will be changed to mg/kg.
3.	Milestone Dates: The Milestone Dates (for completing the Recommendations) are tracked in EPA data systems by month/day/year. Therefore, revise the document's tables to include this format (for each operable unit's section) throughout the Five-Year Review Report.	Concur – will be incorporated in the Draft Final document.	Y		
4.	EPA Protectiveness Statements, Table 3-2: The EPA recommendation for Area 6 was repeated twice and one should be deleted.	Concur – will be incorporated in the Draft Final document.	Y		
5.	Section 8: Please add the date for the deadline of the next Five Year Review	Concur – will be incorporated in the Draft Final document.	Y		

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Supplemental information to address EPA Specific Comment 23:

Chemical	Study Area	EPC	Supplemental RI Section	Supplemental RI Table	Supplemental RI Figure
2,4-DNT	2	99 µg/kg	4.5.3	4-17	4-17
Arsenic	3	43 mg/kg	4.5.4	4-19	4-18
Arsenic	8	51 mg/kg	4.5.8.2	4-34	4-24
Arsenic	17	47/54* mg/kg	4.5.11	4-44, 4-45	4-28
Arsenic	18	41 mg/kg	4.5.12	4-47	4-29
Arsenic	19	50 mg/kg	4.5.13	4-51	4-31
Arsenic	B6-Coke Oven	46 mg/kg	4.5.17	4-63	4-35

*surface soil EPC/subsurface soil EPC